STRUCTURAL FLOOR ANALYSIS

ROOMS 5031 AND 6433
FEDERAL BUILDING
517 Gold Avenue, SW

Albuquerque
New Mexico

BPLW Architects & Engineers, Inc.
Albuquerque, New Mexico
Architect's Project Number: 91062.004

BPLW

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March 11, 1992

Mr. Hector Gonzalez
General Services Administration
PBS, Region 7
Design and Construction Division (7PCPT)
819 Taylor Street
Fort Worth, Texas 76102-6105

Re: ***Floor Load Analysis***
Rooms 6433 and 5031
Federal Building
517 Gold Avenue
Albuquerque, NM

Dear Mr. Gonzalez:

Further investigation of the plans for the Federal Building revealed that the 8" deep dropped panels used in the initial investigation for rooms 6433 and 5031 are actually 4" deep. This caused a minor change in the analysis of the floor slabs.

Therefore, I am sending this revised edition of the report. This edition shall supercede the original report. Per our telephone conversation, I am including the photograph holders so the original photographs can be inserted. Please note that the "CONCLUSIONS" and "RECOMMENDATIONS" portions of the report and the analysis in Appendix B have been revised. Also included in Appendix C is the letter and floor plan sketch for the rearrangement of the map files in room 6433

Mr. Hector Gonzalez
March 11, 1992

I regret that this revision became necessary, but it is important that the report be as accurate as possible. If you have any questions, or if we can be of further assistance, please call.

Sincerely,

BPLW ARCHITECTS & ENGINEERS, INC.

Jason M Weaver

Jason M. Weaver, EI
Structural Engineer

TABLE OF CONTENTS

INTRODUCTION:

The purpose of this report is to explain the investigation, structural floor analysis, and the results of this analysis on rooms 5031 and 6433 of the Federal building located at 517 Gold Avenue SW, Albuquerque, New Mexico. This report was requested by the General Services Administration, Design and Construction Division, Fort Worth, Texas through order number P-07-92-JU-0051.

SCOPE:

The investigation of the floor load capacity of rooms 5031 and 6433 consisted of a site investigation, a structural analysis, conclusions from the analysis, and recommendations regarding any structural problems found through the analysis.

The purpose of the site investigation was to verify existing conditions of the floor slabs in the two rooms mentioned. It was also necessary to verify the existing loads on the floor slabs and the positions of these loads with respect to the structural members supporting the slab.

The structural analysis was requested by GSA to be a two-way slab analysis by the Equivalent Frame Method. The analysis was to include shear strength and moment capacity of the slabs and columns. It was to comply with ACI 318-89 and with PCA'S "Notes on ACI 318-89, Building Code Requirements for Reinforced Concrete."

Conclusions based on the structural analysis are presented in this report as are recommendations concerning the condition of the floor slabs with regard to strength and serviceability.

SITE INVESTIGATION:

Our office performed a site investigation of the two rooms on February 14, 1992. Visible conditions of the floor slabs and loads were noted and measurements of equipment sizes and locations were taken. Photographs of the loads on the floor slabs were taken to include in this report. A second site investigation was performed on February 20, 1992 to verify equipment locations and provide a few more necessary dimensions.

There was no obvious structural distress of the floor slab in room 5031. However, the slab was covered with carpet so a thorough examination of the slab itself was not possible. Room 5031 is currently being used as an office and the live loads were typical of an office with the exception of the number and arrangement of some file cabinets, map files, and book cases (see photos, Appendix A). These were arranged in rows of up to nine file cabinets that obviously delivered some significant loads to the floor slab.

Portions of the other room under consideration, room 6433, are being used for storage of maps in map files (see photos, Appendix A). These map files were also arranged primarily in rows. The floor slab in room 6433 was also covered with carpet, so the surface of the slab could not be seen, but there were obvious areas of structural distress in the floor slab. These were manifested by areas of abnormally large floor deflections, especially under the two major rows of map files.

Although proper measurements of these deflections with surveying equipment was not within the scope of this investigation, the rotation of the floor slab at a column was estimated by measuring a V-shaped gap between two map files. The measured rotation roughly corresponds to a deflection of approximately 1.75" over the 25' span of the floor slab. Although this was obviously not an "exact" method of determining deflections, it served to illustrate the fact that there were major floor deflections in room 6433 at the time of our site investigation.

STRUCTURAL ANALYSIS:

LOADS:

The loads generated and listed in Appendix B include the dead loads of the structure and fixed equipment in the vicinity of rooms 5031 and 6433. The loads due to the file cabinets and map files mentioned in the previous section were calculated assuming the files were completely full of paper with a unit weight of 58 pounds per cubic foot. Since this equipment is relatively hard to move, it was considered as fixed equipment. The live load used is recommended by the Uniform Building Code for office spaces.

STRUCTURE PROPERTIES:

The geometric configuration of the structure and the floor slab were taken from drawings supplied by GSA for another project currently under way, since no evidence during the site investigation contradicted those plans. The floor slab is shown on those plans to be an 8" thick two-way reinforced concrete slab system with dropped panels at the columns. The columns are cast-in-place concrete columns on a 25' grid.

The supplied plans are dated 1956, and are somewhat obscure as to the strengths of materials used. The reinforcing used was specified to comply with ASTM 305-49, an ASTM reference that has since changed to ASTM 615. However, ASTM 615 allows for two different grades of reinforcing, grade 40 with a yield strength of 40 ksi and grade 60 with a yield strength of 60 ksi. Since there was no reference to which grade of reinforcing was used, we assumed that it was grade 40, feeling that it was much more likely to have been used in 1957 than grade 60. Also rather obscure was the strength of the concrete specified for the floor slabs. The plans allowed for three strengths of concrete to be used on the building, 2500 psi, 3000 psi, and 3750 psi. The plans did call for the columns to be of 3750 psi concrete and the walls to be of 3000 psi concrete. We assumed that it was far more likely for the slabs to be the same strength as the walls, so the calculations were based on a concrete strength of 3000 psi. One other pertinent item that was fairly obscure on the plans was the floor slab reinforcement. No reinforcement was specifically called out for the floor slab at column lines "E" or "F" in the north-south direction. However, these column lines are fairly typical and were assumed to be reinforced the same as column line "D". This type of noting, noting one typical item and making the other typical ones the same, was common practice in old style plans.

METHOD OF ANALYSIS:

The method of analysis used was the Equivalent Frame method as per ACI 318-89 (see Appendix B for calculations). This was used to calculate the floor slab stiffnesses at typical sections, dropped panels and at columns. The "equivalent frame" was then modeled on the computer to calculate the stresses in the slab and the columns. The stresses in the members were factored with appropriate ACI load factors in load combination #1. The other load combinations were for computational conveniences only. Deflections were also calculated by the computer program, but these are based on the gross moment of inertia, not the effective moment of inertia and are thus low. The factored stresses calculated by the computer program were then compared to the ultimate moment capacity of the member. The shear loads were calculated by hand and compared to the shear capacities of the slabs. The most highly loaded equivalent frame for each room was analyzed.

CONCLUSIONS:

The floor slabs for this building have dropped panels (8'-4" x 8'-4" x 4" thick) at the columns. These shear panels increase the shear capacity of the slab by increasing the area stressed in shear. Our analysis showed that the shear capacity of the slabs and dropped panels was more than adequate for the applied load (see Appendix B). It showed that there is significant reserve capacity as far as shear failure is concerned for both of the rooms under investigation.

Our analysis showed that the loading of the floor slab in room 6433 due to the mentioned map files has caused the corresponding moment in the floor slab to exceed the moment capacity of the floor slab. This was consistent with the unusually large deflections described earlier. However, the slab is still supporting the loads. We believe that the only reason that the slab has not failed catastrophically is the forgiving nature of the two-way slab system when it comes to moment redistribution. When one area fails, moment is transferred to other areas of the slab/column system. It is possible, however, to subsequently overstress those new areas and cause a progressive failure.

Comparison of the calculated moment in the floor slab at room 5031 with the moment capacity of the slab showed that the current loading exceeded the moment capacity of the slab. In fact, the slab was overstressed under dead and live loads only. As mentioned earlier, the forgiving nature of the two-way slab system provides enough redundancies to prevent collapse.

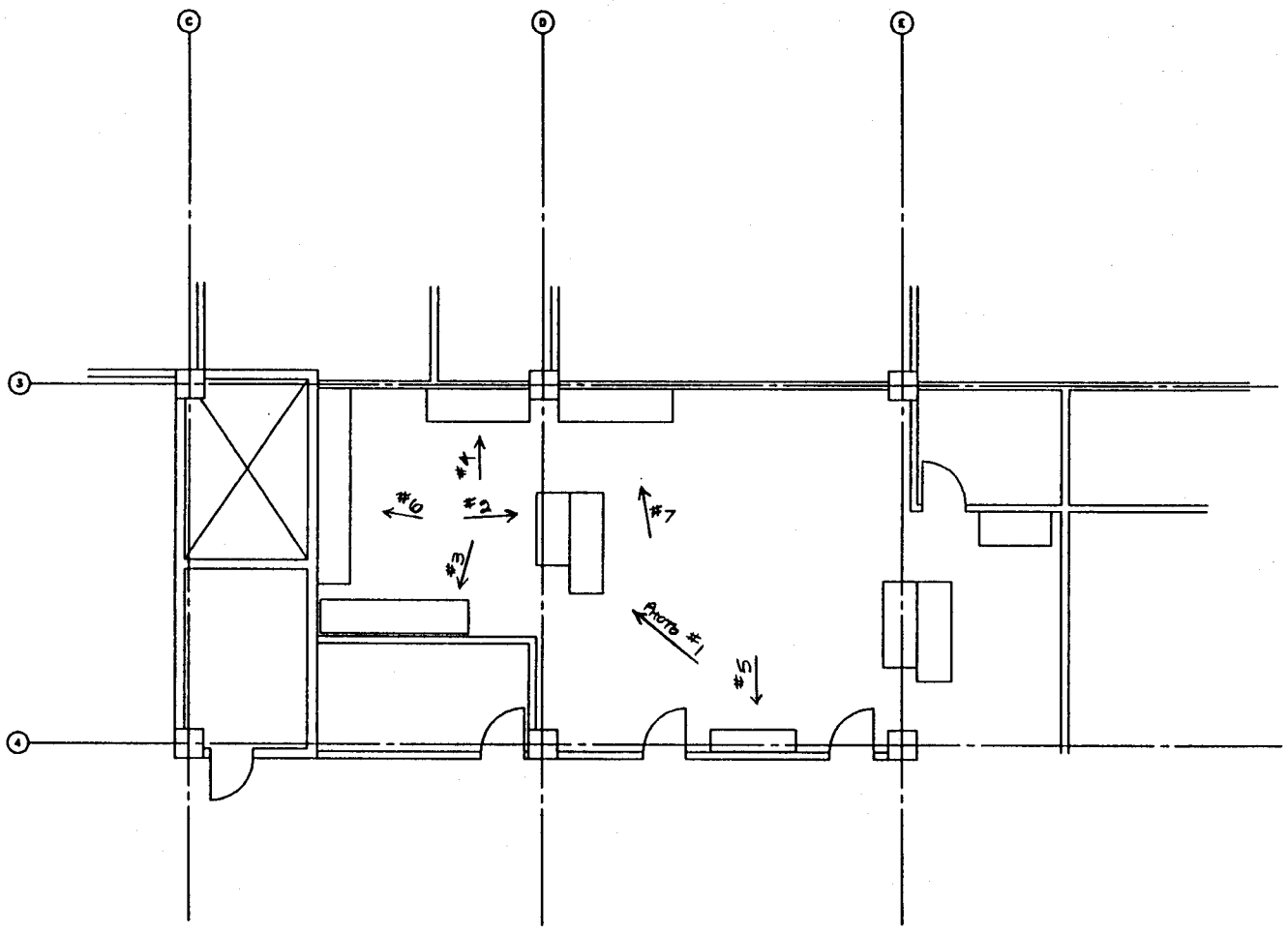
RECOMMENDATIONS:

Based on the results of this analysis, it is apparent that the moment capacity of the slabs is not sufficient to withstand the current loads. This raises the question of the capacity of the slabs in the remainder of the building. It would be extremely wise to perform an investigation on the entire building. This investigation should include material testing of the in-place slab materials and a thorough structural analysis.

The analysis showed that the moment capacity of the slab in room 6433 has been exceeded. This indicates that a portion of the slab has been damaged (see Appendix C). There is no way to know for certain the extent of the damage. It is possible that the redistribution of moments mentioned earlier has caused other areas to become overstressed. Based on that fact, and the observed condition of the slab, it is our recommendation that all the map files and other abnormally heavy loads be removed from the room by hand. We feel that it would not be wise to relocate the map files to other parts of the room until the full extent of the apparent damage has been verified by a testing and investigation procedure beyond the scope of this report.

Since the moment capacity of the floor slab of room 5031 has been exceeded, there is a possibility of slab damage in this room also. It would be prudent to reduce the moment in the slab by relocating the file cabinets, map files and book cases to areas of the room nearest to the columns (see sketch in Appendix C) until such time as a full investigation can be completed.

APPENDIX A



FLOOR PLAN – ROOM 5031
SCALE: 1/4"= 1'-0"

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Designing to Shape the Future

REV.	DESCRIPTION	DATE

ENGINEER | ARCHITECT

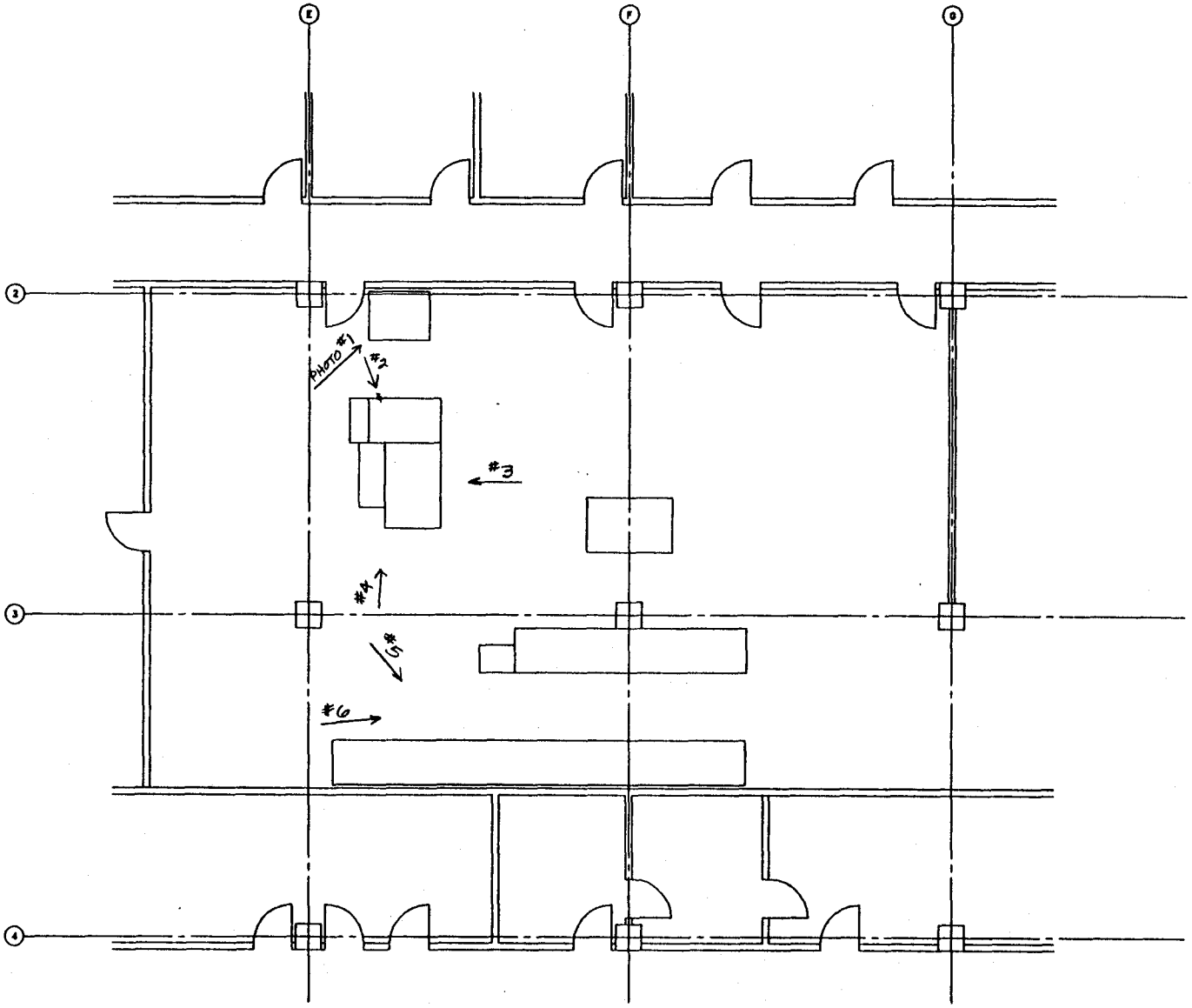
PROJECT NO. | DATE

PHOTO LOCATIONS

DRAWING NO.

SHEET OF

m5031 02-23-92



FLOOR PLAN – ROOM 6433

SCALE: 1/4" = 1'-0"

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REV.	DESCRIPTION	DATE

ENGINEER

ARCHITECT

PROJECT NO.

DATE

PHOTO. LOCATIONS

DRAWING NO.

APPENDIX B

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querque, NM 87110
881-2759
63 East Main Street
Suite 602
Mesa, AZ 85201
(602) 827-2759

Project GSA MAP ROOM
Subject FLOOR LOAD ANALYSIS
Project No. 91062.004 Date 2/20/92 By JMW

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
- ☐ To be typed
- ☐ _____

ROOM 6433

opies to:

Page of

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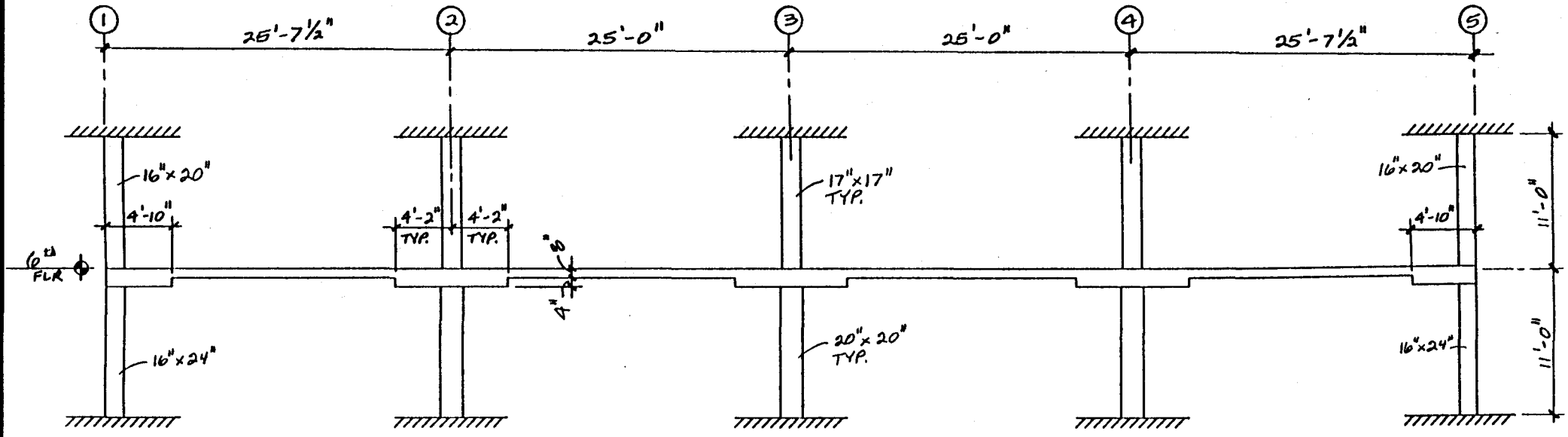

TYPICAL SLAB-BEAM CONFIGURATION

BPLW
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Project _____
Subject _____
Project No. _____ Date _____ By _____

- ☐ Memorandum
- ☐ Telephone record
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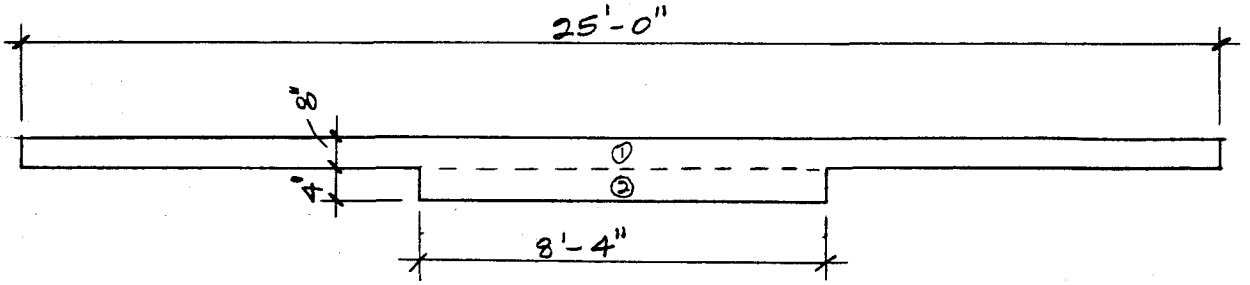
- ☐ To be typed
- ☐ _____



SECTION	AREA	y	Ay
1	2400	8	19,200
2	400	2	800
	2800		20,000

$\bar{y} = 7.14"$

$I_1 = 12,800 \quad A_1 = 2400 \quad d_1 = .86"$

$I_2 = 533 \quad A_2 = 400 \quad d_2 = 5.14"$

$I_g = 12800 + 2400(.86)^2 + 533 + 400(5.14)^2$

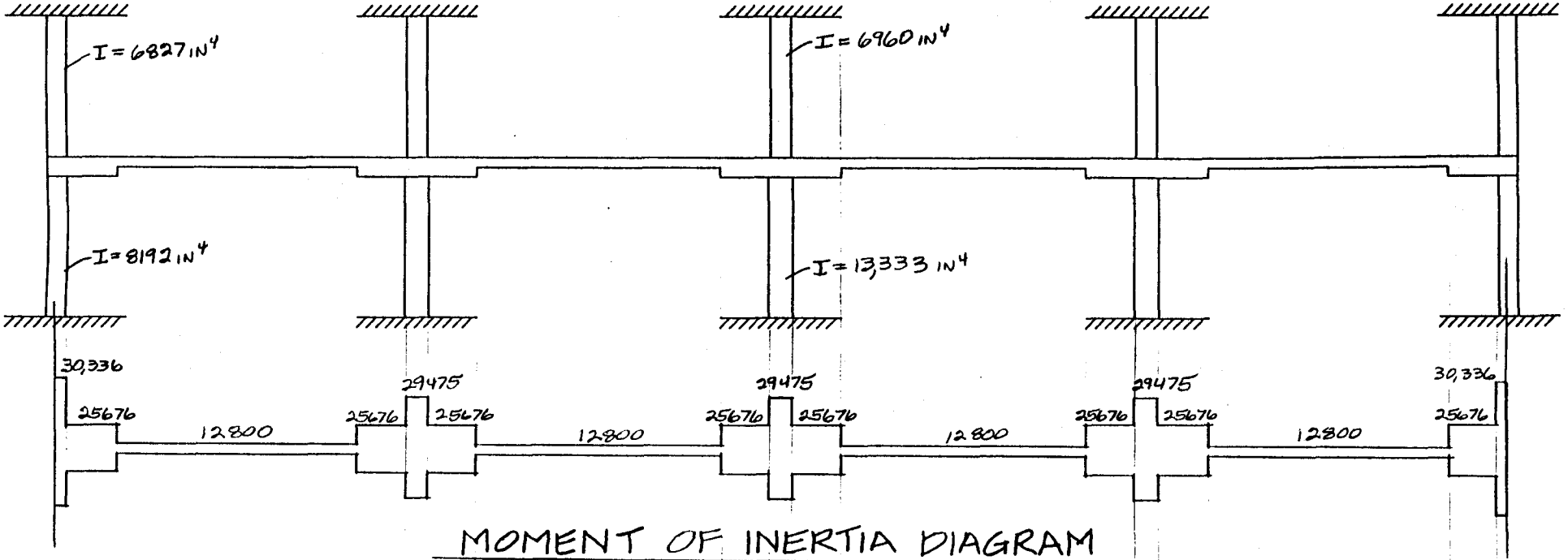
$= 25,676$

Copies to:

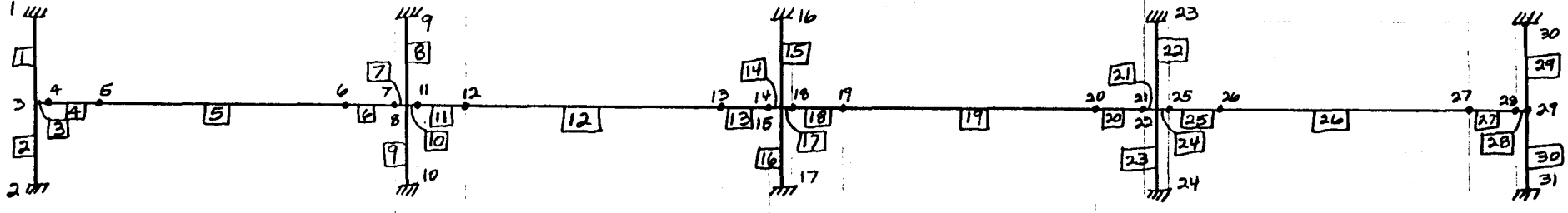
l_2 15'

$E_{cs} = 3.122 \times 10^6$ psi

$E_{cc} = 3.491 \times 10^6$ psi



MOMENT OF INERTIA DIAGRAM



NODE: $\overset{3}{\bullet}$ OR $\overset{3}{+}$

ELEMENT: [3]

FIXED SUPPORT

COMPUTER MODEL

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Project GSA MAP ROOM
Subject SLAB ANALYSIS
Project No. 91062.004 Date 2/20/92 By JMW

☐ Memorandum
☐ Telephone record
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☐ _____

GRAVITY LOADS:

DEAD: SLAB = 100 psf
FLOORING = 2 psf
CEILING (SUSP. SYS, PLASTER, ACC. TILE) = 14 psf
MECH. 4 psf
ELEC. 2 psf
122 psf

LIVE: 50 psf

CONSIDER MAP FILES AS FIXED EQUIP. (DEAD LOADS).

FLOOR TO FLOOR HEIGHT = 11'-0"

COLUMN TO COLUMN SPACING : 25'-0"

SLAB BEAM WIDTH = 25'-0"

$W_{DL} = 25(.122) = 3.05$ klf

$W_{LL} = 25(.050) = 1.25$ klf

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Subject _____

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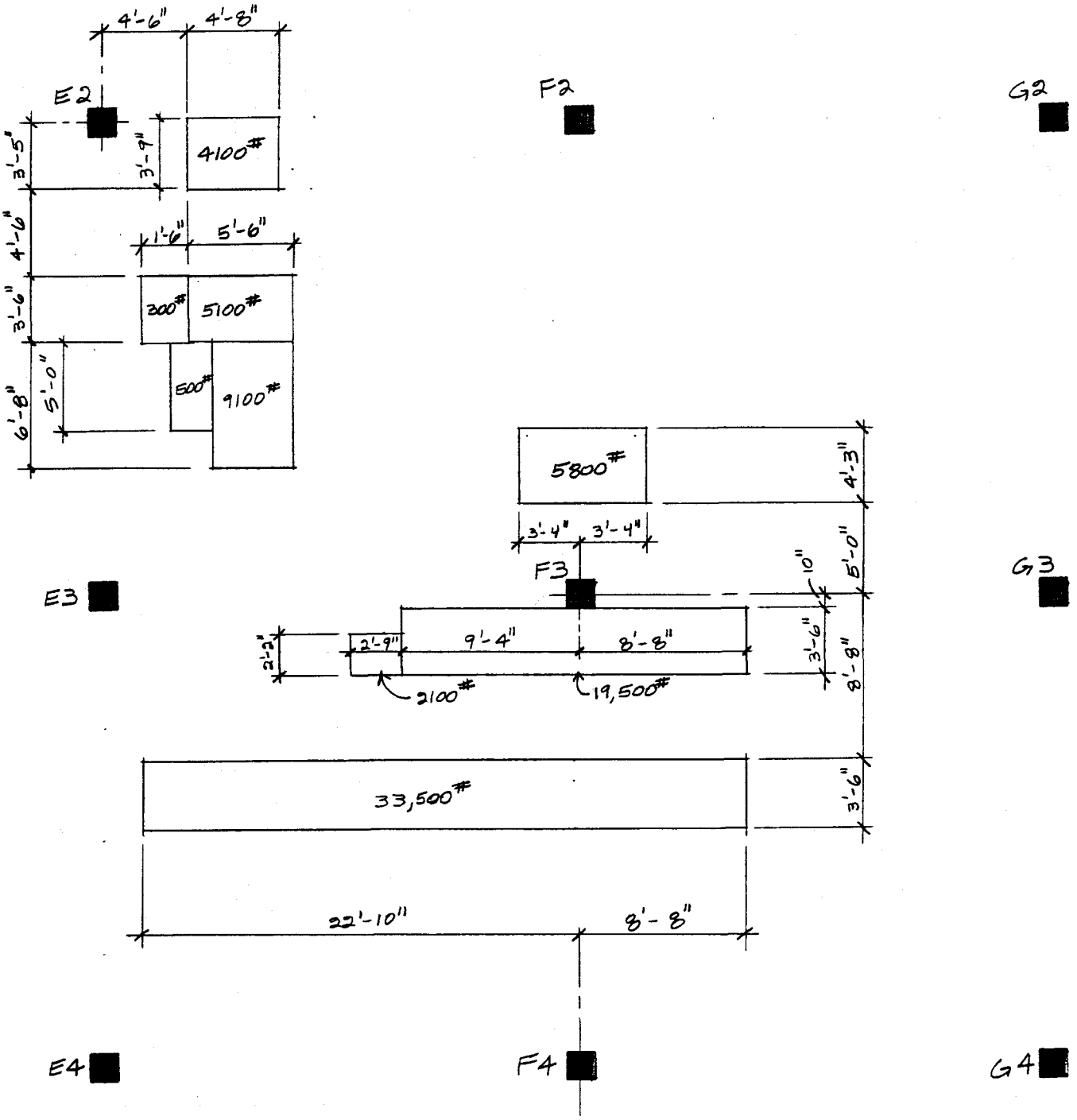

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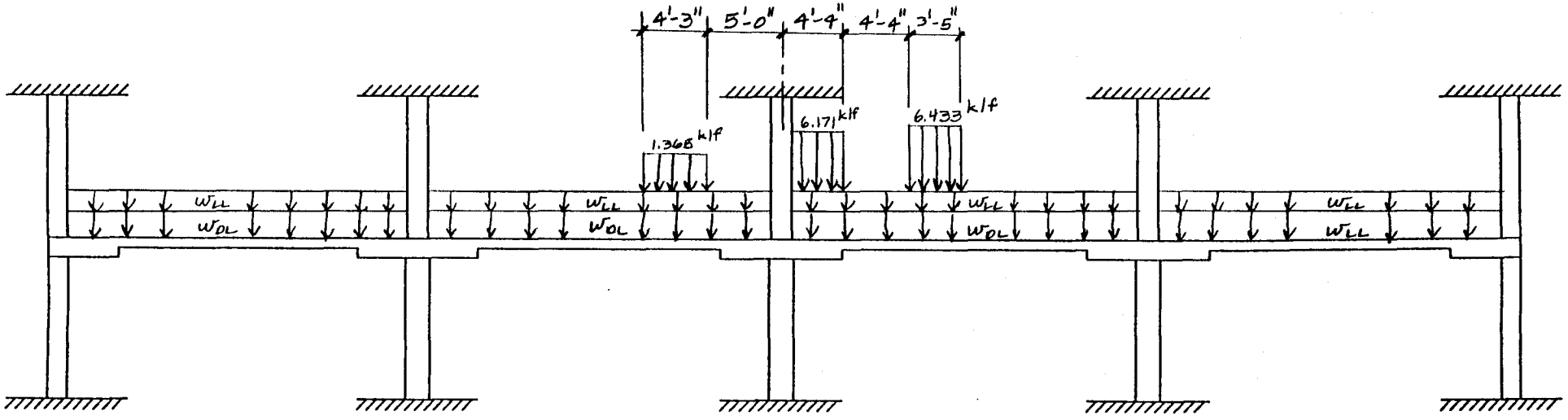

SLAB - BEAM "F"

N O D A L I N F O R M A T I O N

NODE NO	NODAL COORDINATES X	Y	SUPPORT CONDITIONS CODE	PX STIFF	PY STIFF	M STIFF
Units :	Ft	Ft		K /In	K /In	K -In /Deg
1	0.000	22.000	F			
2	0.000	0.000	F			
3	0.000	11.000				
4	0.830	11.000				
5	4.830	11.000				
6	20.830	11.000				
7	24.170	11.000				
8	25.000	11.000				
9	25.000	22.000	F			
10	25.000	0.000	F			
11	25.830	11.000				
12	29.170	11.000				
13	45.840	11.000				
14	49.170	11.000				
15	50.000	11.000				
16	50.000	22.000	F			
17	50.000	0.000	F			
18	50.830	11.000				
19	54.160	11.000				
20	70.830	11.000				
21	74.170	11.000				
22	75.000	11.000				
23	75.000	22.000	F			
24	75.000	0.000	F			
25	75.830	11.000				
26	79.170	11.000				
27	95.170	11.000				
28	99.170	11.000				
29	100.000	11.000				
30	100.000	22.000	F			
31	100.000	0.000	F			

E L E M E N T I N F O R M A T I O N

ELEM NO	NE NODE	PE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	PE HINGE
		Units : Ft		Deg				
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3	3	4	0.830	0.00	4	BEAM		
4	4	5	4.000	0.00	2	BEAM		
5	5	6	16.000	0.00	1	BEAM		
6	6	7	3.340	0.00	2	BEAM		
7	7	8	0.830	0.00	3	BEAM		

E L E M E N T I N F O R M A T I O N

EL NO	NE NODE	PE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	PE HINGE
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9	10	8	11.000	90.00	7	BEAM		
10	8	11	0.830	0.00	3	BEAM		
1	11	12	3.340	0.00	2	BEAM		
2	12	13	16.670	0.00	1	BEAM		
13	13	14	3.330	0.00	2	BEAM		
4	14	15	0.830	0.00	3	BEAM		
5	15	16	11.000	90.00	5	BEAM		
16	17	15	11.000	90.00	7	BEAM		
17	15	18	0.830	0.00	3	BEAM		
8	18	19	3.330	0.00	2	BEAM		
19	19	20	16.670	0.00	1	BEAM		
20	20	21	3.340	0.00	2	BEAM		
21	21	22	0.830	0.00	3	BEAM		
22	22	23	11.000	90.00	5	BEAM		
23	24	22	11.000	90.00	7	BEAM		
24	22	25	0.830	0.00	3	BEAM		
25	25	26	3.340	0.00	2	BEAM		
26	26	27	16.000	0.00	1	BEAM		
27	27	28	4.000	0.00	2	BEAM		
28	28	29	0.830	0.00	4	BEAM		
29	29	30	11.000	90.00	6	BEAM		
30	31	29	11.000	90.00	8	BEAM		

P R O P E R T Y I N F O R M A T I O N

PROP ID	SECTION NAME	MODULUS	AREA	I	DIST
	Units :	K /In 2	In2	In4	Ft
1	SLAB BEAM ONLY	3.1e+003	2.4e+003	1.28e+004	
2	SLAB BEAM @ DROP PAN	3.1e+003	2.8e+003	2.57e+004	
3	S.B. @ INT. COLUMNS	3.1e+003	2.8e+003	2.95e+004	
4	S.B. @ EXT. COLUMNS	3.1e+003	2.8e+003	3.03e+004	
5	6TH FLOOR INT. COLUM	3.5e+003	289	6.96e+003	
6	6TH FLOOR EXT. COLUM	3.5e+003	320	6.83e+003	
7	5TH FLOOR INT. COLUM	3.5e+003	400	1.33e+004	
8	5TH FLOOR INT. COLUM	3.5e+003	384	8.19e+003	

E L E M E N T L O A D I N F O R M A T I O N

EC NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC	DIST	PX	PY	M
				Units :	Ft	K /Ft	K /Ft	Ft-K /Ft

E L E M E N T L O A D I N F O R M A T I O N

E NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC		DIST	PX	PY	M
scription : DL									
ement List : 3-7,10-14,17-21,24-28									
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					E	1.00	0.00	-3.05	0.00
scription : LL									
ement List : 3-7,10-14,17-21,24-28									
2	2	UNIF	GLO	FRAC	B	0.00	0.00	-1.25	0.00
					E	1.00	0.00	-1.25	0.00
scription : MAP FILES									
ement List : 12									
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					E	0.95	0.00	-1.37	0.00
scription : MAP FILES									
ement List : 18									
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					E	1.00	0.00	-6.17	0.00
scription : MAP FILES									
ement List : 19									
5	3	UNIF	GLO	FRAC	B	0.00	0.00	-6.17	0.00
					E	0.01	0.00	-6.17	0.00
scription : MAP FILES									
ement List : 19									
6	3	UNIF	GLO	FRAC	B	0.31	0.00	-6.43	0.00
					E	0.53	0.00	-6.43	0.00

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
	Units :	In	In	Deg

OAD COMBINATIONS:

OMB 1 : 1.40 X CASE 1
+ 1.70 X CASE 2
+ 1.40 X CASE 3

OMB 2 : 1.00 X CASE 1
+ 1.00 X CASE 2
+ 1.00 X CASE 3

OMB 3 : 1.00 X CASE 1
+ 1.00 X CASE 2

OMB 4 : 1.00 X CASE 1
+ 1.00 X CASE 3

OMB 5 : 1.40 X CASE 1
+ 1.70 X CASE 2

1	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
2	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
3	1	0.0008	-0.0039	-0.1111
	2	0.0006	-0.0026	-0.0747
	3	0.0001	-0.0026	-0.0745
	4	0.0005	-0.0019	-0.0531
	5	0.0002	-0.0039	-0.1108
4	1	0.0008	-0.0247	-0.1275
	2	0.0006	-0.0166	-0.0857
	3	0.0001	-0.0166	-0.0855
	4	0.0005	-0.0118	-0.0609
	5	0.0002	-0.0247	-0.1271

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
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	2	0.0006	-0.1020	-0.1078
	3	0.0001	-0.1016	-0.1074
	4	0.0005	-0.0724	-0.0766
	5	0.0001	-0.1511	-0.1597
6	1	0.0007	-0.0784	0.1249
	2	0.0005	-0.0527	0.0840
	3	0.0000	-0.0520	0.0833
	4	0.0005	-0.0376	0.0598
	5	0.0001	-0.0773	0.1239
7	1	0.0007	-0.0144	0.0444
	2	0.0005	-0.0097	0.0299
	3	0.0000	-0.0095	0.0289
	4	0.0005	-0.0069	0.0215
	5	0.0001	-0.0142	0.0429
8	1	0.0007	-0.0092	0.0151
	2	0.0005	-0.0062	0.0103
	3	0.0000	-0.0062	0.0091
	4	0.0005	-0.0044	0.0076
	5	0.0000	-0.0092	0.0136
9	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
10	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
11	1	0.0007	-0.0089	-0.0107
	2	0.0005	-0.0059	-0.0071
	3	0.0000	-0.0062	-0.0086
	4	0.0005	-0.0041	-0.0046
	5	0.0000	-0.0092	-0.0128

NODAL DISPLACEMENTS

NODE NO	LOAD COMB	DX	DY	ROTATION
12	1	0.0007	-0.0451	-0.0805
	2	0.0005	-0.0302	-0.0540
	3	0.0000	-0.0320	-0.0567
	4	0.0005	-0.0209	-0.0375
	5	0.0000	-0.0475	-0.0843
13	1	0.0007	-0.0396	0.0781
	2	0.0005	-0.0260	0.0520
	3	0.0000	-0.0368	0.0600
	4	0.0005	-0.0153	0.0346
	5	0.0000	-0.0548	0.0893
14	1	0.0007	-0.0088	-0.0032
	2	0.0005	-0.0058	-0.0033
	3	0.0000	-0.0073	0.0166
	4	0.0005	-0.0037	-0.0081
	5	0.0000	-0.0109	0.0246
15	1	0.0007	-0.0118	-0.0328
	2	0.0005	-0.0081	-0.0235
	3	-0.0000	-0.0058	0.0000
	4	0.0005	-0.0064	-0.0235
	5	-0.0000	-0.0087	0.0000
16	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
17	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
18	1	0.0007	-0.0208	-0.0689
	2	0.0005	-0.0144	-0.0482
	3	-0.0000	-0.0073	-0.0166
	4	0.0005	-0.0122	-0.0434
	5	-0.0000	-0.0109	-0.0246

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
19	1	0.0007	-0.1060	-0.1573
	2	0.0005	-0.0734	-0.1086
	3	-0.0000	-0.0368	-0.0600
	4	0.0005	-0.0627	-0.0911
	5	-0.0000	-0.0548	-0.0893
20	1	0.0005	-0.0844	0.1384
	2	0.0004	-0.0583	0.0953
	3	-0.0000	-0.0320	0.0567
	4	0.0004	-0.0490	0.0788
	5	-0.0000	-0.0475	0.0843
21	1	0.0005	-0.0150	0.0446
	2	0.0004	-0.0104	0.0313
	3	-0.0000	-0.0062	0.0086
	4	0.0004	-0.0086	0.0288
	5	-0.0000	-0.0092	0.0128
22	1	0.0005	-0.0101	0.0111
	2	0.0004	-0.0068	0.0085
	3	-0.0000	-0.0062	-0.0091
	4	0.0004	-0.0050	0.0111
	5	-0.0000	-0.0092	-0.0136
23	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
24	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
25	1	0.0005	-0.0110	-0.0201
	2	0.0004	-0.0072	-0.0125
	3	-0.0000	-0.0095	-0.0289
	4	0.0004	-0.0045	-0.0042
	5	-0.0001	-0.0142	-0.0429

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
26	1	0.0005	-0.0607	-0.1084
	2	0.0003	-0.0401	-0.0722
	3	-0.0000	-0.0520	-0.0833
	4	0.0004	-0.0250	-0.0480
	5	-0.0001	-0.0773	-0.1239
27	1	0.0004	-0.1440	0.1512
	2	0.0003	-0.0966	0.1013
	3	-0.0001	-0.1016	0.1074
	4	0.0003	-0.0670	0.0701
	5	-0.0001	-0.1511	0.1597
28	1	0.0004	-0.0237	0.1215
	2	0.0003	-0.0157	0.0815
	3	-0.0001	-0.0166	0.0855
	4	0.0003	-0.0111	0.0566
	5	-0.0002	-0.0247	0.1271
29	1	0.0004	-0.0038	0.1059
	2	0.0003	-0.0026	0.0710
	3	-0.0001	-0.0026	0.0745
	4	0.0003	-0.0018	0.0493
	5	-0.0002	-0.0039	0.1108
30	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
31	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	Units :		K	K	K -Ft	K -Ft /In	Ft

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST

COMBINATIONS:

COMB 1 : 1.40 X CASE 1
+ 1.70 X CASE 2
+ 1.40 X CASE 3

COMB 2 : 1.00 X CASE 1
+ 1.00 X CASE 2
+ 1.00 X CASE 3

COMB 3 : 1.00 X CASE 1
+ 1.00 X CASE 2

COMB 4 : 1.00 X CASE 1
+ 1.00 X CASE 3

COMB 5 : 1.40 X CASE 1
+ 1.70 X CASE 2

1	1	3	33.2136	-16.0145	117.2517		
		1	33.2136	-16.0145	-58.9077	-0.0380	3.66
	2	3	22.3345	-10.7736	78.8736		
		1	22.3345	-10.7736	-39.6357	-0.0255	3.66
	3	3	22.3053	-10.6810	78.3015		
		1	22.3053	-10.6810	-39.1894	-0.0254	3.67
	4	3	15.8504	-7.6686	56.1116		
		1	15.8504	-7.6686	-28.2435	-0.0182	3.66
	5	3	33.1726	-15.8849	116.4507		
		1	33.1726	-15.8849	-58.2828	-0.0378	3.67
2	1	2	-39.8563	-18.9705	69.3329		
		3	-39.8563	-18.9705	-139.3422	0.0379	7.33
	2	2	-26.8014	-12.7541	46.6057		
		3	-26.8014	-12.7541	-93.6889	0.0255	7.33
	3	2	-26.7663	-12.7828	46.8395		
		3	-26.7663	-12.7826	-93.7718	0.0254	7.33
	4	2	-19.0205	-9.0381	32.9896		
		3	-19.0205	-9.0381	-66.4296	0.0181	7.33
	5	2	-39.8072	-19.0108	69.6602		
		3	-39.8072	-19.0108	-139.4583	0.0378	7.33

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
3	1	3	-2.9560	73.0698	-256.5939		
		4	-2.9560	67.7620	-198.1487	0.0004	0.41
	2	3	-1.9805	49.1359	-172.5625		
		4	-1.9805	45.5669	-133.2608	0.0002	0.41
	3	3	-2.1019	49.0716	-172.0732		
		4	-2.1019	45.5026	-132.8249	0.0002	0.41
	4	3	-1.3695	34.8709	-122.5412		
		4	-1.3695	32.3394	-94.6489	0.0002	0.41
	5	3	-3.1259	72.9798	-255.9089		
		4	-3.1259	67.6719	-197.5385	0.0004	0.41
4	1	4	-2.9560	67.7620	-198.1487		
		5	-2.9560	42.1820	21.7392	0.0035	1.58
	2	4	-1.9805	45.5669	-133.2608		
		5	-1.9805	28.3669	14.6070	0.0024	1.58
	3	4	-2.1019	45.5026	-132.8249		
		5	-2.1019	28.3026	14.7856	0.0024	1.58
	4	4	-1.3695	32.3394	-94.6489		
		5	-1.3695	20.1394	10.3088	0.0017	1.58
	5	4	-3.1259	67.6719	-197.5385		
		5	-3.1259	42.0919	21.9893	0.0035	1.58
5	1	5	-2.9560	42.1820	21.7392	160.8572	6.60
		6	-2.9560	-60.1380	-121.9092	-0.1679	7.39
	2	5	-1.9805	28.3669	14.6070	108.1748	6.60
		6	-1.9805	-40.4331	-81.9219	-0.1129	7.39
	3	5	-2.1019	28.3026	14.7856	107.9296	6.50
		6	-2.1019	-40.4974	-82.7724	-0.1125	7.38
	4	5	-1.3695	20.1394	10.3088	76.8001	6.60
		6	-1.3695	-28.6606	-57.8602	-0.0802	7.39
	5	5	-3.1259	42.0919	21.9893	160.5139	6.58
		6	-3.1259	-60.2281	-123.0999	-0.1673	7.38

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	1	6	-2.9560	-60.1380	-121.9092		
		7	-2.9560	-81.4973	-358.4403	0.0070	1.81
	2	6	-1.9805	-40.4331	-81.9219		
		7	-1.9805	-54.7951	-240.9529	0.0047	1.81
	3	6	-2.1019	-40.4974	-82.7724		
		7	-2.1019	-54.8594	-242.0182	0.0048	1.81
	4	6	-1.3695	-28.6606	-57.8602		
		7	-1.3695	-38.8476	-170.5988	0.0034	1.81
	5	6	-3.1259	-60.2281	-123.0999		
		7	-3.1259	-81.5874	-359.9317	0.0071	1.81
	1	7	-2.9560	-81.4973	-358.4403		
		8	-2.9560	-86.8052	-426.2858	0.0006	0.42
	2	7	-1.9805	-54.7951	-240.9529		
		8	-1.9805	-58.3641	-287.9139	0.0004	0.42
	3	7	-2.1019	-54.8594	-242.0182		
		8	-2.1019	-58.4284	-289.0326	0.0004	0.42
	4	7	-1.3695	-38.8476	-170.5988		
		8	-1.3695	-41.3791	-203.8928	0.0003	0.42
	5	7	-3.1259	-81.5874	-359.9317		
		8	-3.1259	-86.8952	-429.5519	0.0006	0.42
	1	8	70.0693	2.1220	-15.7268		
		9	70.0693	2.1220	7.6152	0.0051	3.71
	2	8	47.1012	1.4329	-10.6257		
		9	47.1012	1.4329	5.1363	0.0035	3.71
	3	8	47.3305	1.3292	-9.7555		
		9	47.3305	1.3292	4.8662	0.0031	3.67
	4	8	33.3423	1.0465	-7.7898		
		9	33.3423	1.0465	3.7217	0.0026	3.72
	5	8	70.3904	1.9769	-14.5085		
		9	70.3904	1.9769	7.2371	0.0046	3.67

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
1	10	-96.9818	4.4109	-16.4902		
	8	-96.9818	4.4109	32.0293	-0.0052	7.37
2	10	-65.1920	2.9910	-11.1925		
	8	-65.1920	2.9910	21.7084	-0.0035	7.37
3	10	-63.5094	2.5625	-9.4105		
	8	-63.5094	2.5625	18.7768	-0.0031	7.34
4	10	-46.1485	2.2461	-8.4569		
	8	-46.1485	2.2461	16.2801	-0.0026	7.38
5	10	-97.4261	3.8109	-13.9954		
	8	-97.4261	3.8109	27.9250	-0.0046	7.34
1	8	-0.6671	80.2459	-380.5297		
	11	-0.6671	74.9381	-316.1284	0.0006	0.41
2	8	-0.4224	53.9291	-255.5798		
	11	-0.4224	50.3601	-212.2998	0.0004	0.41
3	8	-0.8686	54.4115	-260.5003		
	11	-0.8686	50.8425	-216.8199	0.0004	0.41
4	8	-0.1699	38.1118	-179.8529		
	11	-0.1699	35.5803	-149.2707	0.0003	0.41
5	8	-1.2918	80.9213	-387.4185		
	11	-1.2918	75.6134	-322.4566	0.0006	0.41
1	11	-0.6671	74.9381	-316.1284		
	12	-0.6671	53.5788	-101.5083	0.0061	1.52
2	11	-0.4224	50.3601	-212.2998		
	12	-0.4224	35.9981	-68.0816	0.0041	1.52
3	11	-0.8686	50.8425	-216.8199		
	12	-0.8686	36.4805	-70.9905	0.0042	1.53
4	11	-0.1699	35.5803	-149.2707		
	12	-0.1699	25.3933	-47.4448	0.0029	1.52
5	11	-1.2918	75.6134	-322.4566		
	12	-1.2918	54.2541	-105.5778	0.0063	1.53

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

ELEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
12	1	12	-0.6671	53.5788	-101.5053	122.9422	8.38
		13	-0.6671	-61.4877	-122.9489	-0.1277	8.33
	2	12	-0.4224	35.9981	-68.0816	82.6000	8.37
		13	-0.4224	-41.7271	-84.0631	-0.0857	8.32
	3	12	-0.8686	36.4805	-70.9908	83.7567	8.46
		13	-0.8686	-35.2005	-60.3218	-0.0884	8.42
	4	12	-0.1699	25.3933	-47.4448	58.2632	8.33
		13	-0.1699	-31.4944	-66.5277	-0.0600	8.28
	5	12	-1.2918	54.2541	-105.5778	124.5638	8.48
		13	-1.2918	-52.3505	-89.7112	-0.1314	8.42
13	1	13	-0.6671	-61.4877	-122.9489		
		14	-0.6671	-82.7831	-363.1599	0.0071	1.80
	2	13	-0.4224	-41.7271	-84.0631		
		14	-0.4224	-56.0461	-246.8554	0.0048	1.80
	3	13	-0.8686	-35.2005	-60.3218		
		14	-0.8686	-49.5195	-201.3806	0.0038	1.82
	4	13	-0.1699	-31.4944	-66.5277		
		14	-0.1699	-41.6509	-188.3145	0.0037	1.80
	5	13	-1.2918	-52.3505	-89.7112		
		14	-1.2918	-73.6459	-299.4952	0.0056	1.82
14	1	14	-0.6671	-82.7831	-363.1599		
		15	-0.6671	-88.0909	-434.0726	0.0006	0.42
	2	14	-0.4224	-56.0461	-246.8554		
		15	-0.4224	-59.6151	-294.8548	0.0004	0.42
	3	14	-0.8686	-49.5195	-201.3806		
		15	-0.8686	-53.0885	-243.9630	0.0004	0.42
	4	14	-0.1699	-41.6509	-188.3145		
		15	-0.1699	-44.1924	-223.9353	0.0003	0.42
	5	14	-1.2918	-73.6459	-299.4952		
		15	-1.2918	-78.9537	-362.8240	0.0005	0.42

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

EL M NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
13	1	15	90.2651	-4.8830	35.6493		
		16	90.2651	-4.8830	-18.0640	-0.0113	3.65
	2	15	61.7008	-3.4879	25.4638		
		16	61.7008	-3.4879	-12.9029	-0.0080	3.65
	3	15	44.5358	0.0000	-0.0000		
		16	44.5358	0.0000	0.0000		
	4	15	48.7544	-3.4879	25.4638		
		16	48.7544	-3.4879	-12.9029	-0.0080	3.65
	5	15	66.2340	0.0000	-0.0000		
		16	66.2340	0.0000	0.0000		
6	1	17	-124.9344	-9.0207	32.7704		
		15	-124.9344	-9.0207	-66.4578	0.0112	7.32
	2	17	-85.3991	-6.4434	23.4074		
		15	-85.3991	-6.4434	-47.4699	0.0080	7.32
	3	17	-61.6412	0.0000	-0.0000		
		15	-61.6412	0.0000	0.0000		
	4	17	-67.4801	-6.4434	23.4074		
		15	-67.4801	-6.4434	-47.4699	0.0080	7.32
	5	17	-91.6734	0.0000	-0.0000		
		15	-91.6734	0.0000	0.0000		
7	1	15	-4.8048	127.1086	-536.1797		
		18	-4.8048	121.8007	-432.8824	0.0008	0.41
	2	15	-3.3779	87.4848	-367.7655		
		18	-3.3779	83.9158	-296.6572	0.0005	0.41
	3	15	-0.8686	53.0885	-243.9630		
		18	-0.8686	49.5195	-201.3806	0.0004	0.41
	4	15	-3.1254	72.0521	-296.8690		
		18	-3.1254	69.5206	-238.1163	0.0004	0.41
	5	15	-1.2918	78.9537	-362.8240		
		18	-1.2918	73.6459	-299.4952	0.0005	0.41

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

EL M NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
18	1	18	-4.8048	121.8007	-432.8824		
		19	-4.8048	71.7362	-110.6435	0.0077	1.49
	2	18	-3.3779	83.9158	-296.6572		
		19	-3.3779	49.0474	-75.2735	0.0053	1.49
	3	18	-0.8686	49.5195	-201.3806		
		19	-0.8686	35.2005	-60.3218	0.0038	1.51
	4	18	-3.1254	69.5206	-238.1163		
		19	-3.1254	38.8147	-57.7381	0.0042	1.49
	5	18	-1.2918	73.6459	-299.4752		
		19	-1.2918	52.3505	-89.7112	0.0056	1.51
	1	19	-4.8048	71.7362	-110.6435	212.6343	7.60
		20	-4.8048	-69.2404	-145.2308	-0.2159	8.04
	2	19	-3.3779	49.0474	-75.2735	146.7106	7.59
		20	-3.3779	-47.1849	-99.3141	-0.1487	8.03
	3	19	-0.8686	35.2005	-60.3218	83.7567	8.19
		20	-0.8686	-36.4805	-70.9905	-0.0884	8.25
	4	19	-3.1254	38.8147	-57.7381	122.6139	7.51
		20	-3.1254	-36.5801	-78.6774	-0.1231	7.98
	5	19	-1.2918	52.3505	-89.7112	124.5638	8.19
		20	-1.2918	-54.2541	-105.5778	-0.1314	8.25
	1	20	-4.8048	-69.2404	-145.2308		
		21	-4.8048	-90.5997	-412.1637	0.0082	1.81
	2	20	-3.3779	-47.1849	-99.3141		
		21	-3.3779	-61.5469	-280.8964	0.0056	1.80
	3	20	-0.8686	-36.4805	-70.9905		
		21	-0.8686	-50.8425	-216.8199	0.0042	1.81
	4	20	-3.1254	-36.5801	-78.6774		
		21	-3.1254	-46.7671	-217.8674	0.0044	1.80
	5	20	-1.2918	-54.2541	-105.5778		
		21	-1.2918	-75.6134	-322.4566	0.0063	1.81

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

[redacted] NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
[redacted]	1	21	-4.8048	-90.5997	-412.1637		
		22	-4.8048	-95.9075	-489.5641	0.0007	0.42
	2	21	-3.3779	-61.5469	-280.8964		
		22	-3.3779	-65.1159	-333.4615	0.0005	0.42
	3	21	-0.8686	-50.8425	-216.8199		
		22	-0.8686	-54.4115	-260.5003	0.0004	0.42
	4	21	-3.1254	-46.7671	-217.8674		
		22	-3.1254	-49.2986	-257.7347	0.0004	0.42
	5	21	-1.2918	-75.6134	-322.4566		
		22	-1.2918	-80.9213	-387.4185	0.0006	0.42
[redacted]	1	22	77.2798	1.5536	-11.5103		
		23	77.2798	1.5536	5.5797	0.0037	3.70
	2	22	52.2515	1.1925	-8.8293		
		23	52.2515	1.1925	4.2886	0.0029	3.70
	3	22	47.3305	-1.3292	9.7555		
		23	47.3305	-1.3292	-4.8662	-0.0031	3.67
	4	22	38.4927	1.5789	-11.6653		
		23	38.4927	1.5789	5.7032	0.0038	3.69
	5	22	70.3904	-1.9769	14.5085		
		23	70.3904	-1.9769	-7.2371	-0.0046	3.67
[redacted]	1	24	-106.9617	3.2207	-12.0335		
		22	-106.9617	3.2207	23.3946	-0.0038	7.37
	2	24	-72.3205	2.4601	-9.1815		
		22	-72.3205	2.4601	17.8801	-0.0029	7.37
	3	24	-65.5094	-2.5625	9.4105		
		22	-65.5094	-2.5625	-18.7768	0.0031	7.34
	4	24	-53.2770	3.2051	-11.9171		
		22	-53.2770	3.2051	23.3384	-0.0038	7.36
	5	24	-97.4261	-3.8109	13.9954		
		22	-97.4261	-3.8109	-27.9250	0.0046	7.34

E L E M E N T R E P O R T S

BIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
1	22	-3.1377	88.3340	-454.6593		
	25	-3.1377	83.0261	-383.5448	0.0007	0.41
2	22	-2.1103	59.4560	-306.7521		
	25	-2.1103	55.8870	-258.8847	0.0005	0.41
3	22	-2.1019	58.4284	-389.0326		
	25	-2.1019	54.8594	-242.0182	0.0004	0.41
4	22	-1.4993	42.4710	-222.7310		
	25	-1.4993	39.9395	-168.5306	0.0003	0.41
5	22	-3.1259	86.8752	-429.8519		
	25	-3.1259	81.5874	-359.9317	0.0006	0.41
1	25	-3.1377	83.0261	-383.5448		
	26	-3.1377	61.6668	-141.9077	0.0077	1.54
2	25	-2.1103	55.8870	-258.8847		
	26	-2.1103	41.5250	-96.2065	0.0052	1.54
3	25	-2.1019	54.8594	-242.0182		
	26	-2.1019	40.4974	-82.7724	0.0048	1.54
4	25	-1.4993	39.9395	-168.5306		
	26	-1.4993	29.7525	-72.1448	0.0038	1.54
5	25	-3.1259	81.5874	-359.9317		
	26	-3.1259	60.2281	-123.0999	0.0071	1.53
1	26	-3.1377	61.6668	-141.9077	155.4179	9.64
	27	-3.1377	-40.6532	26.2011	-0.1577	9.75
2	26	-2.1103	41.5250	-96.2065	104.2968	9.66
	27	-2.1103	-27.2750	17.7941	-0.1057	9.75
3	26	-2.1019	40.4974	-82.7724	107.9296	9.42
	27	-2.1019	-28.3026	14.7856	-0.1125	8.62
4	26	-1.4993	29.7525	-72.1448	72.9722	9.75
	27	-1.4993	-19.0475	13.4959	-0.0730	8.81
5	26	-3.1259	60.2281	-123.0999	160.5139	9.42
	27	-3.1259	-42.0919	21.9893	-0.1673	8.62

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	1	27	-3.1377	-40.6532	26.2011		
		28	-3.1377	-66.2332	-187.5717	0.0032	2.45
	2	27	-2.1103	-27.2750	17.7941		
		28	-2.1103	-44.4750	-125.7058	0.0021	2.45
	3	27	-2.1019	-28.3026	14.7856		
		28	-2.1019	-45.5026	-132.8249	0.0024	2.42
	4	27	-1.4993	-19.0475	13.4959		
		28	-1.4993	-31.2475	-87.0939	0.0015	2.46
	5	27	-3.1259	-42.0919	21.9893		
		28	-3.1259	-67.6719	-197.5385	0.0035	2.42
	1	28	-3.1377	-66.2332	-187.5717		
		29	-3.1377	-71.5410	-244.7480	0.0003	0.42
	2	28	-2.1103	-44.4750	-125.7058		
		29	-2.1103	-48.0440	-164.1011	0.0002	0.42
	3	28	-2.1019	-45.5026	-132.8249		
		29	-2.1019	-49.0716	-172.0732	0.0002	0.42
	4	28	-1.4993	-31.2475	-87.0939		
		29	-1.4993	-33.7790	-114.0799	0.0002	0.42
	5	28	-3.1259	-67.6719	-197.5385		
		29	-3.1259	-72.9798	-255.9089	0.0004	0.42
	1	29	32.5187	15.1197	-110.9654		
		30	32.5187	15.1197	55.3513	0.0361	3.67
	2	29	21.8382	10.1344	-74.3834		
		30	21.8382	10.1344	37.0955	0.0242	3.67
	3	29	22.3053	10.6810	-78.3015		
		30	22.3053	10.6810	39.1894	0.0254	3.67
	4	29	15.3541	7.0295	-51.6214		
		30	15.3541	7.0295	25.7032	0.0168	3.67
	5	29	33.1726	15.8849	-116.4507		
		30	33.1726	15.8849	58.2828	0.0378	3.67

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
30	1	31	-39.0224	18.2574	-67.0490		
		29	-39.0224	18.2574	133.7826	-0.0362	7.34
	2	31	-26.2058	12.2447	-44.9744		
		29	-26.2058	12.2447	89.7177	-0.0243	7.34
	3	31	-26.7663	12.7828	-46.8395		
		29	-26.7663	12.7828	93.7718	-0.0254	7.33
	4	31	-18.4249	8.5288	-31.3582		
		29	-18.4249	8.5288	62.4585	-0.0169	7.34
	5	31	-39.8072	19.0108	-69.6602		
		29	-39.8072	19.0108	139.4583	-0.0378	7.33

R E A C T I O N S

NODE NO	LOAD COMB	PX	PY	MOMENT
	Units :	K	K	K -Ft

COMBINATIONS:

COMB 1 : 1.40 X CASE 1
+ 1.70 X CASE 2
+ 1.40 X CASE 3

COMB 2 : 1.00 X CASE 1
+ 1.00 X CASE 2
+ 1.00 X CASE 3

COMB 3 : 1.00 X CASE 1
+ 1.00 X CASE 2

COMB 4 : 1.00 X CASE 1
+ 1.00 X CASE 3

COMB 5 : 1.40 X CASE 1
+ 1.70 X CASE 2

1	1	-16.0145	33.2134	-58.9077
	2	-10.7736	22.3345	-39.6357
	3	-10.6810	22.3053	-39.1894
	4	-7.6686	15.8504	-28.2435
	5	-15.8849	33.1726	-58.2828

R E A C T I O N S

JOINT NO	LOAD COMB	PX	PY	MOMENT
2	1	18.9705	39.8563	-69.3329
	2	12.7541	26.8014	-46.6057
	3	12.7828	26.7663	-46.8395
	4	9.0381	19.0205	-32.9896
	5	19.0108	39.8072	-69.6602
9	1	2.1220	70.0693	7.6152
	2	1.4329	47.1012	5.1363
	3	1.3292	47.3305	4.8662
	4	1.0465	33.3423	3.7217
	5	1.9769	70.3904	7.2371
10	1	-4.4109	96.9819	16.4902
	2	-2.9910	65.1720	11.1925
	3	-2.5625	65.5094	9.4105
	4	-2.2461	46.1483	8.4569
	5	-3.8109	97.4261	13.9954
16	1	-4.8830	90.2651	-18.0640
	2	-3.4879	61.7008	-12.9029
	3	0.0000	44.5358	0.0000
	4	-3.4879	48.7544	-12.9029
	5	0.0000	66.2340	0.0000
17	1	9.0207	124.9344	-32.7704
	2	6.4434	85.3991	-23.4074
	3	-0.0000	61.6412	0.0000
	4	6.4434	67.4301	-23.4074
	5	-0.0000	91.6734	0.0000
23	1	1.5536	77.2798	5.5797
	2	1.1925	52.2515	4.2886
	3	-1.3292	47.3305	-4.8662
	4	1.5789	38.4927	5.7032
	5	-1.9769	70.3904	-7.2371
24	1	-3.2207	106.9617	12.0335
	2	-2.4601	72.3205	9.1815
	3	2.5625	65.5094	-9.4105
	4	-3.2051	53.2770	11.9171
	5	3.8109	97.4261	-13.9954

R E A C T I O N S

JOINT NO	LOAD COMB	PX	PY	MOMENT
30	1	15.1197	32.5187	55.3513
	2	10.1344	21.8382	37.0955
	3	10.6810	22.3053	39.1894
	4	7.0295	15.3541	25.7032
	5	15.8849	33.1726	58.2828
31	1	-18.2574	39.0224	67.0490
	2	-12.2447	26.2058	44.9744
	3	-12.7828	26.7663	46.8395
	4	-8.5288	18.4249	31.3582
	5	-19.0108	39.8072	69.6602

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AFC #5 Suite 400
uquerque, NM 87110
) 881-2759
63 East Main Street
Suite 602
Mesa, AZ 85201
(602) 827-2759

Project
Subject
Project No. Date By

❑ Memorandum
❑ Telephone record
❑ Note to the file
❑ Minutes of meeting
❑ To be typed
❑

SLAB BEAM "F"

NODE MAX. FACTORED NEG. MOMENT @ DROPPED PANEL $= -536^{1-k}$

" " " " @ 8" SECTION $= -145^{1-k}$

" " POS. " " " " $= 212.6^{1-k}$

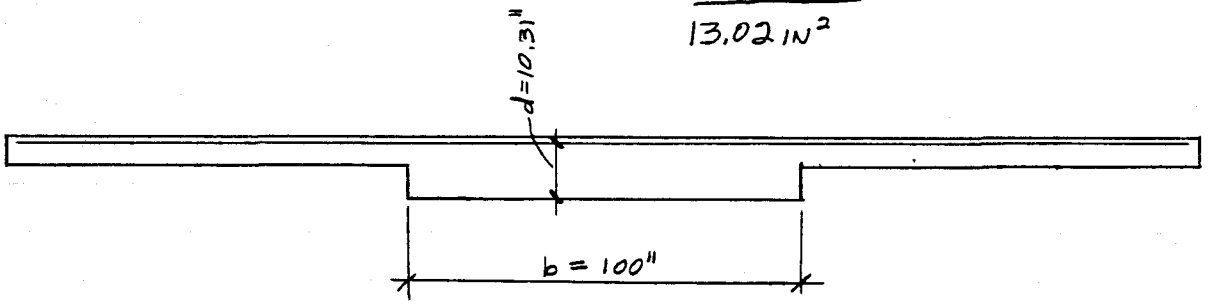
@ DROPPED PANEL:

$M_u = -536^{1-k}$ M_u (DEAD & LIVE) $= 362.824^{1-k}$

TOP BARS: $28 - \#5 \Rightarrow A_s = 8.68\ in^2$

$14 - \#5 \Rightarrow A_s = 4.34\ in^2$

$13.02\ in^2$



$\phi M_n \geq M_u$ $\phi = .90$ $f'_c = 3000\ psi$ $f_y = 40\ ksi$

$$a = \frac{13.02(40)}{.85(3)(100)} = 2.04"$$

$$\phi M_n = \frac{1}{12}(.9)\left[13.02(40)(10.31 - (\tfrac{2.04}{2}))\right]$$

$\phi M_n = 362.867 < 536^{1-k}$ X N.G.

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CHECK 8" SECTION.

$M_u = -145^{1-k}$ $\qquad M_u\ (DEAD\ \&\ LIVE) = 105.6^{1-k}$

TOP BARS: $28\ \#5 \Rightarrow A_s = 8.68\ IN^2$
$14\ \#5 \Rightarrow A_s = 4.34\ IN^2$
$13.02\ IN^2$

$d = 6.31"$

$$a = \frac{13.02(40)}{.85(3)(300)} = 0.681"$$

$$\phi M_n = \frac{1}{12}(.9)\left[13.02(40)\left(6.31 - \left(\frac{.681}{2}\right)\right)\right]$$

$\phi M_n = 233^{1-k} > 145^{1-k}$ ✓ OK

POS. MOMENT:

$M_u = 212.6^{1-k}$ $\qquad M_u\ (DEAD\ \&\ LIVE) = 105.6^{1-k}$

BOT. BARS: $26\ \#5$, $16\ \#5 > A_s = 13.02\ IN^2$

$\phi M_n = 233^{1-k}$ ✓ OK.

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Project GSA MAP Room

Subject FLOOR LOAD ANALYSIS

Project No. 91062.004 Date 2/21/92 By JMW

- ☐ Memorandum
- ☐ Telephone record
- ☐ Note to the file
- ☐ Minutes of meeting
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ROOM 5031

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Subject _____

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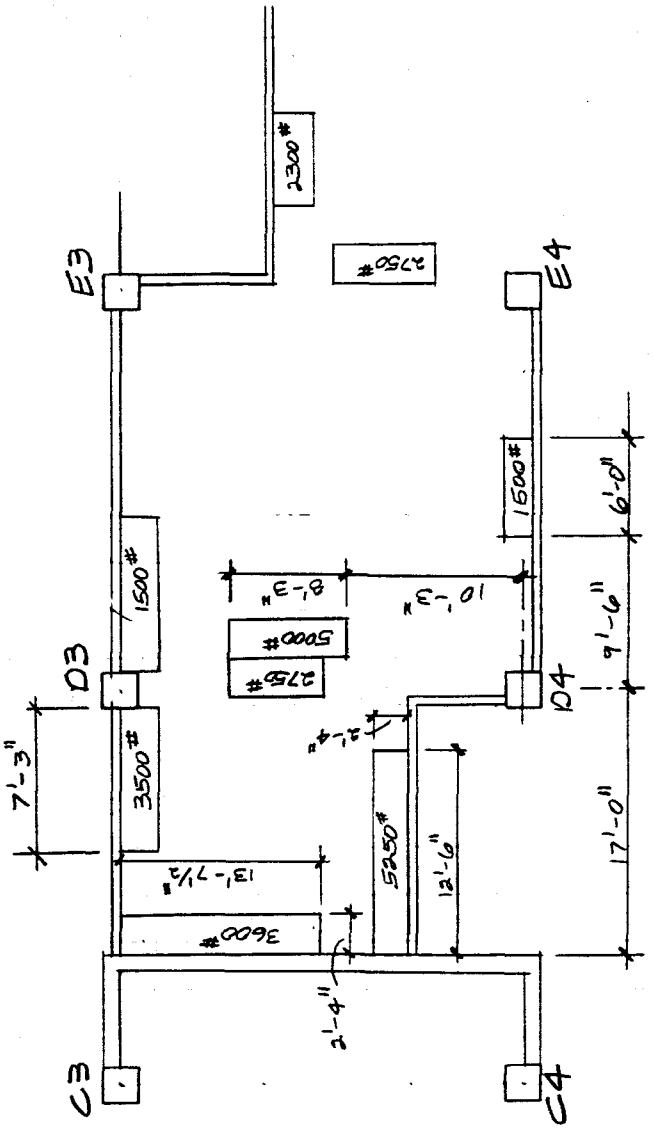

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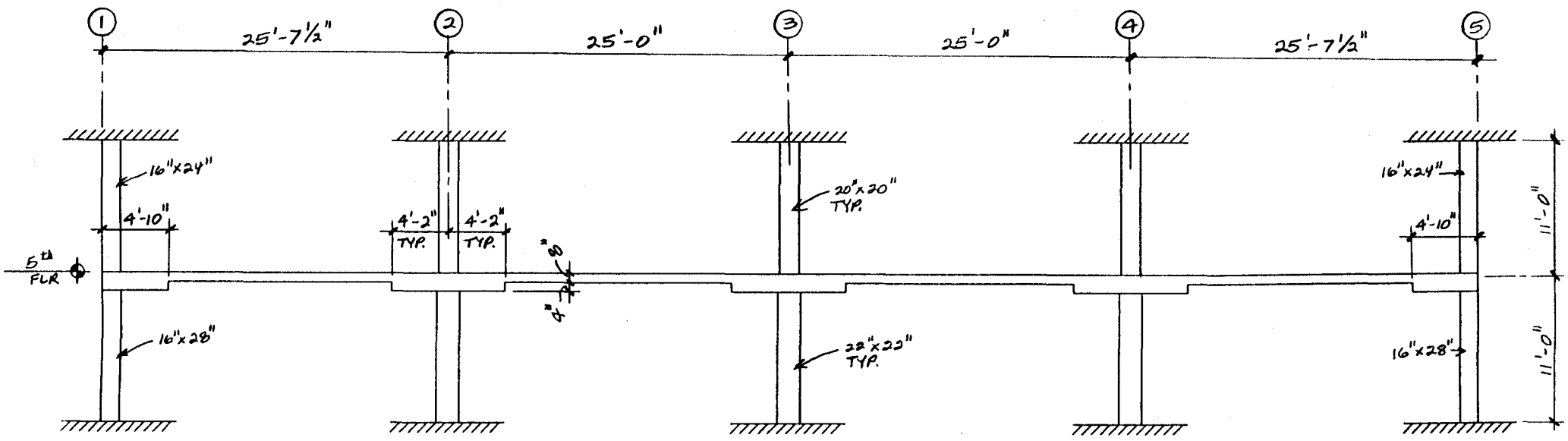
Designing to Shape the Future

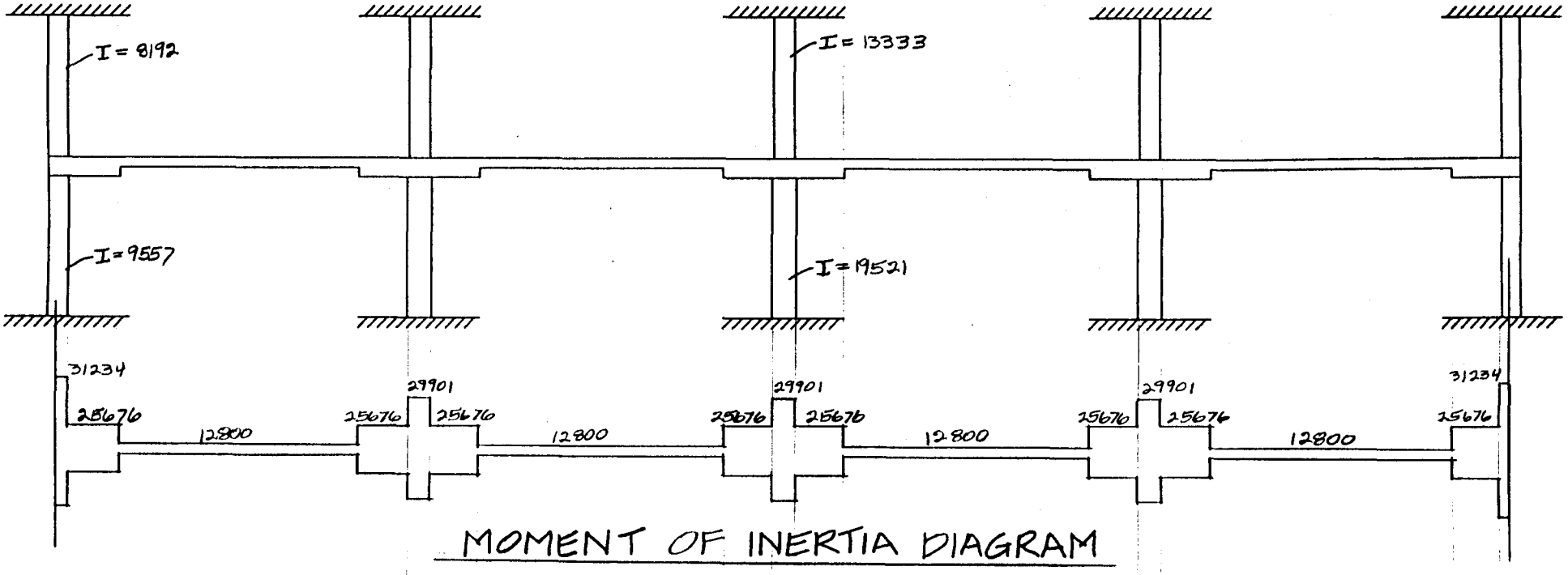


TYPICAL SLAB-BEAM CONFIGURATION

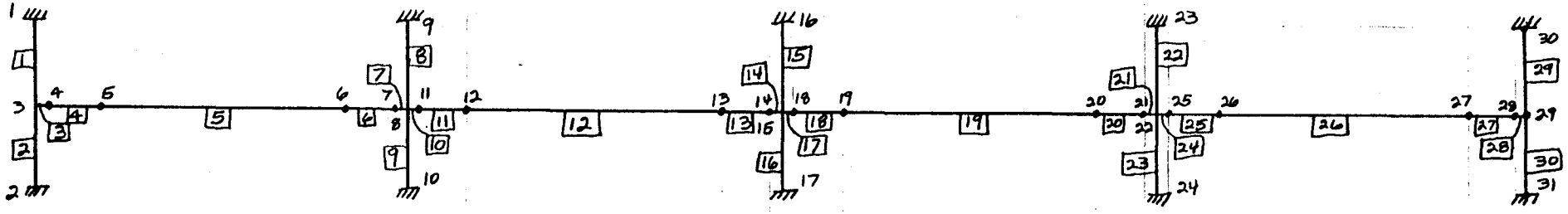
$l_2 = 25'$

$E_{cs} = 3.122 \times 10^6$ psi

$E_{cc} = 3.491 \times 10^6$ psi



MOMENT OF INERTIA DIAGRAM

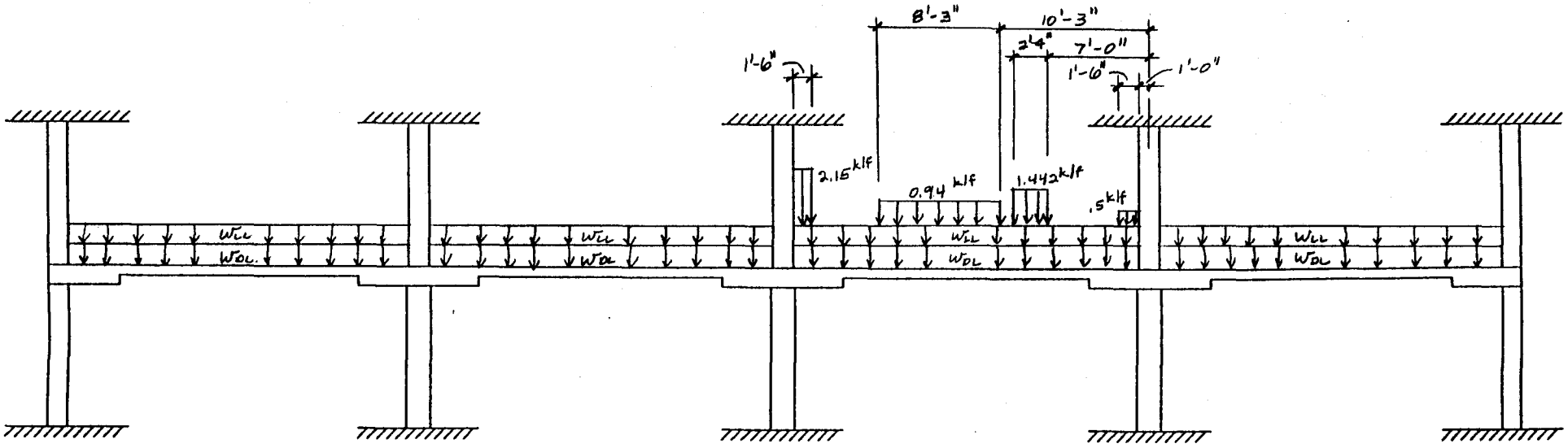


NODE: $\overset{3}{\bullet}$ OR $\overset{3}{+}$

ELEMENT: [2]

FIXED SUPPORT

COMPUTER MODEL


8'-3"
10'-3"
2'4"
7'-0"
1'-6"
1'-6"
1'-0"
2.15klf
0.94 klf
1.442klf
.5klf
WLL
WDL

N O D A L I N F O R M A T I O N

NODE NO	NODAL COORDINATES X	Y	SUPPORT CONDITIONS CODE	PX STIFF	PY STIFF	M STIFF
	Units : Ft	Ft		K /In	K /In	K -In /Deg
1	0.000	22.000	F			
2	0.000	0.000	F			
3	0.000	11.000				
4	0.830	11.000				
5	4.830	11.000				
6	20.830	11.000				
7	24.170	11.000				
8	25.000	11.000				
9	25.000	22.000	F			
10	25.000	0.000	F			
11	25.830	11.000				
12	29.170	11.000				
13	45.840	11.000				
14	49.170	11.000				
15	50.000	11.000				
16	50.000	22.000	F			
17	50.000	0.000	F			
18	50.830	11.000				
19	54.160	11.000				
20	70.830	11.000				
21	74.170	11.000				
22	75.000	11.000				
23	75.000	22.000	F			
24	75.000	0.000	F			
25	75.830	11.000				
26	79.170	11.000				
27	95.170	11.000				
28	99.170	11.000				
29	100.000	11.000				
30	100.000	22.000	F			
31	100.000	0.000	F			

E L E M E N T I N F O R M A T I O N

ELEM N	NE NODE	FE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	FE HINGE
		Units : Ft		Deg				
1	3	1	11.000	90.00	6	BEAM		
2	2	3	11.000	90.00	8	BEAM		
3	3	4	0.830	0.00	4	BEAM		
4	4	5	4.000	0.00	2	BEAM		
5	5	6	16.000	0.00	1	BEAM		
6	6	7	3.340	0.00	2	BEAM		
7	7	8	0.830	0.00	3	BEAM		

E L E M E N T I N F O R M A T I O N

ELEM NO	NE NODE	PE NODE	ELEM LENGTH	BETA ANGLE	PROP TYPE	ELEM TYPE	NE HINGE	PE HINGE
8	8	9	11.000	90.00	5	BEAM		
9	10	8	11.000	90.00	7	BEAM		
10	9	11	0.830	0.00	3	BEAM		
1	11	12	3.340	0.00	2	BEAM		
2	12	13	16.670	0.00	1	BEAM		
13	13	14	3.330	0.00	2	BEAM		
4	14	15	0.830	0.00	3	BEAM		
5	15	16	11.000	90.00	5	BEAM		
16	17	15	11.000	90.00	7	BEAM		
17	15	18	0.830	0.00	3	BEAM		
8	18	19	3.330	0.00	2	BEAM		
19	19	20	16.670	0.00	1	BEAM		
20	20	21	3.340	0.00	2	BEAM		
1	21	22	0.830	0.00	3	BEAM		
22	22	23	11.000	90.00	5	BEAM		
23	24	22	11.000	90.00	7	BEAM		
24	22	25	0.830	0.00	3	BEAM		
5	25	26	3.340	0.00	2	BEAM		
26	26	27	16.000	0.00	1	BEAM		
27	27	28	4.000	0.00	2	BEAM		
28	28	29	0.830	0.00	4	BEAM		
29	29	30	11.000	90.00	6	BEAM		
30	31	29	11.000	90.00	8	BEAM		

P R O P E R T Y I N F O R M A T I O N

PROP ID	SECTION NAME	MODULUS	AREA	I	DIST
	Units :	K /In 2	In2	In4	Ft
1	SLAB BEAM ONLY	3.1e+003	2.4e+003	1.28e+004	
2	SLAB BEAM @ DROP PAN	3.1e+003	2.8e+003	2.57e+004	
3	S.B. @ INT. COLUMNS	3.1e+003	2.8e+003	2.99e+004	
4	S.B. @ EXT. COLUMNS	3.1e+003	2.8e+003	3.12e+004	
5	5TH FLOOR INT. COLUM	3.5e+003	400	1.33e+004	
6	5TH FLOOR EXT. COLUM	3.5e+003	384	8.19e+003	
7	4TH FLOOR INT. COLUM	3.5e+003	484	1.95e+004	
8	4TH FLOOR EXT. COLUM	3.5e+003	448	9.56e+003	

E L E M E N T L O A D I N F O R M A T I O N

SEC NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC	DIST	PX	PY	M
				Units :	Ft	K /Ft	K /Ft	Ft-K /Ft

E L E M E N T L O A D I N F O R M A T I O N

ELEMENT NO	LOAD CASE	LOAD TYPE	LOAD SYS	DIST SPEC		DIST	PX	PY	M
escription : DL									
ement List : 3-7,10-14,17-21,24-28									
1	1	UNIF	GLO	FRAC	B	0.00	0.00	-3.05	0.00
					E	1.00	0.00	-3.05	0.00
escription : LL									
ement List : 3-7,10-14,17-21,24-28									
2	2	UNIF	GLO	FRAC	B	0.00	0.00	-1.25	0.00
					E	1.00	0.00	-1.25	0.00
escription : FILE CABS									
ement List : 18									
3	3	UNIF	GLO	FRAC	B	0.00	0.00	-2.15	0.00
					E	0.45	0.00	-2.15	0.00
escription : FILE CABS									
ement List : 19									
4	3	UNIF	GLO	FRAC	B	0.15	0.00	-0.94	0.00
					E	0.66	0.00	-0.94	0.00
escription : FILE CABS									
ement List : 19									
5	3	UNIF	GLO	FRAC	B	0.72	0.00	-1.44	0.00
					E	0.86	0.00	-1.44	0.00
escription : FILE CABS									
ement List : 20									
6	3	UNIF	GLO	FRAC	B	0.55	0.00	-0.50	0.00
					E	1.00	0.00	-0.50	0.00

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
	Units :	In	In	Deg

OAD COMBINATIONS:

OMB 1 : 1.40 X CASE 1
+ 1.70 X CASE 2
+ 1.40 X CASE 3

OMB 2 : 1.00 X CASE 1
+ 1.00 X CASE 2
+ 1.00 X CASE 3

OMB 3 : 1.00 X CASE 1
+ 1.00 X CASE 2

OMB 4 : 1.00 X CASE 1
+ 1.00 X CASE 3

OMB 5 : 1.40 X CASE 1
+ 1.70 X CASE 2

1	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
2	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
3	1	0.0002	-0.0033	-0.0981
	2	0.0001	-0.0022	-0.0660
	3	0.0001	-0.0022	-0.0659
	4	0.0001	-0.0016	-0.0468
	5	0.0002	-0.0033	-0.0980
4	1	0.0002	-0.0219	-0.1149
	2	0.0001	-0.0147	-0.0773
	3	0.0001	-0.0147	-0.0771
	4	0.0001	-0.0105	-0.0548
	5	0.0002	-0.0219	-0.1147

N O D A L D I S P L A C E M E N T S

NODE NO	LOAD COMB	DX	DY	ROTATION
5	1	0.0001	-0.1400	-0.1518
	2	0.0001	-0.0941	-0.1021
	3	0.0001	-0.0940	-0.1019
	4	0.0001	-0.0668	-0.0724
	5	0.0001	-0.1398	-0.1515
6	1	0.0001	-0.0710	0.1186
	2	0.0001	-0.0477	0.0798
	3	0.0001	-0.0474	0.0794
	4	0.0000	-0.0340	0.0567
	5	0.0001	-0.0704	0.1181
7	1	0.0001	-0.0114	0.0383
	2	0.0000	-0.0076	0.0258
	3	0.0000	-0.0076	0.0253
	4	0.0000	-0.0054	0.0185
	5	0.0001	-0.0113	0.0376
8	1	0.0001	-0.0071	0.0097
	2	0.0000	-0.0048	0.0065
	3	0.0000	-0.0048	0.0060
	4	0.0000	-0.0034	0.0048
	5	0.0001	-0.0071	0.0089
9	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
10	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
11	1	0.0001	-0.0077	-0.0157
	2	0.0000	-0.0052	-0.0105
	3	0.0000	-0.0053	-0.0113
	4	0.0000	-0.0036	-0.0072
	5	0.0001	-0.0079	-0.0168

N O D A L D I S P L A C E M E N T S

[redacted]DE NO	LOAD COMB	DX	DY	ROTATION
12	1	0.0001	-0.0470	-0.0845
	2	0.0000	-0.0316	-0.0567
	3	0.0000	-0.0326	-0.0584
	4	0.0000	-0.0221	-0.0398
	5	0.0001	-0.0485	-0.0868
13	1	0.0000	-0.0476	0.0846
	2	0.0000	-0.0317	0.0567
	3	0.0000	-0.0357	0.0605
	4	0.0000	-0.0214	0.0391
	5	0.0000	-0.0531	0.0900
14	1	0.0000	-0.0081	0.0164
	2	0.0000	-0.0054	0.0107
	3	0.0000	-0.0060	0.0165
	4	0.0000	-0.0036	0.0059
	5	0.0000	-0.0090	0.0245
15	1	0.0000	-0.0073	-0.0087
	2	0.0000	-0.0050	-0.0062
	3	-0.0000	-0.0046	0.0000
	4	0.0000	-0.0036	-0.0062
	5	-0.0000	-0.0068	0.0000
16	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
17	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
18	1	-0.0000	-0.0114	-0.0368
	2	-0.0000	-0.0077	-0.0252
	3	-0.0000	-0.0060	-0.0165
	4	0.0000	-0.0060	-0.0205
	5	-0.0000	-0.0090	-0.0245

N O D A L D I S P L A C E M E N T S

JOINT NO	LOAD COMB	DX	DY	ROTATION
19	1	-0.0000	-0.0679	-0.1118
	2	-0.0000	-0.0463	-0.0761
	3	-0.0000	-0.0357	-0.0605
	4	-0.0000	-0.0359	-0.0585
	5	-0.0000	-0.0531	-0.0900
20	1	-0.0001	-0.0632	0.1087
	2	-0.0001	-0.0431	0.0742
	3	-0.0000	-0.0326	0.0584
	4	-0.0000	-0.0337	0.0572
	5	-0.0001	-0.0485	0.0868
21	1	-0.0001	-0.0101	0.0239
	2	-0.0001	-0.0069	0.0199
	3	-0.0000	-0.0053	0.0113
	4	-0.0001	-0.0054	0.0166
	5	-0.0001	-0.0079	0.0168
22	1	-0.0001	-0.0076	-0.0003
	2	-0.0001	-0.0051	0.0002
	3	-0.0000	-0.0048	-0.0060
	4	-0.0001	-0.0037	0.0019
	5	-0.0001	-0.0071	-0.0089
23	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
24	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
25	1	-0.0001	-0.0102	-0.0297
	2	-0.0001	-0.0068	-0.0196
	3	-0.0000	-0.0076	-0.0253
	4	-0.0001	-0.0047	-0.0123
	5	-0.0001	-0.0113	-0.0376

N O D A L D I S P L A C E M E N T S

JOINT NO	LOAD COMB	DX	DY	ROTATION
26	1	-0.0001	-0.0648	-0.1127
	2	-0.0001	-0.0433	-0.0756
	3	-0.0001	-0.0474	-0.0794
	4	-0.0001	-0.0296	-0.0525
	5	-0.0001	-0.0704	-0.1181
27	1	-0.0002	-0.1375	0.1486
	2	-0.0001	-0.0923	0.0998
	3	-0.0001	-0.0940	0.1019
	4	-0.0001	-0.0650	0.0702
	5	-0.0001	-0.1398	0.1515
28	1	-0.0002	-0.0216	0.1129
	2	-0.0001	-0.0145	0.0759
	3	-0.0001	-0.0147	0.0771
	4	-0.0001	-0.0102	0.0533
	5	-0.0002	-0.0219	0.1147
29	1	-0.0002	-0.0033	0.0965
	2	-0.0001	-0.0022	0.0648
	3	-0.0001	-0.0022	0.0659
	4	-0.0001	-0.0016	0.0457
	5	-0.0002	-0.0033	0.0980
30	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000
31	1	0.0000	0.0000	0.0000
	2	0.0000	0.0000	0.0000
	3	0.0000	0.0000	0.0000
	4	0.0000	0.0000	0.0000
	5	0.0000	0.0000	0.0000

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
Units :		K	K	K -Ft	K -Ft /In	Ft

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
COMBINATIONS:						
1 : 1.40 X CASE 1						
+ 1.70 X CASE 2						
+ 1.40 X CASE 3						
2 : 1.00 X CASE 1						
+ 1.00 X CASE 2						
+ 1.00 X CASE 3						
3 : 1.00 X CASE 1						
+ 1.00 X CASE 2						
4 : 1.00 X CASE 1						
+ 1.00 X CASE 3						
5 : 1.40 X CASE 1						
+ 1.70 X CASE 2						
1	3	33.9736	-16.8941	123.8454		
	1	33.9736	-16.8941	-61.9898	-0.0335	3.67
2	3	22.8448	-11.3606	83.2811		
	1	22.8448	-11.3606	-41.6856	-0.0225	3.67
3	3	22.8290	-11.3435	83.1552		
	1	22.8290	-11.3435	-41.6229	-0.0225	3.67
4	3	16.2085	-8.0631	59.1081		
	1	16.2085	-8.0631	-29.5859	-0.0160	3.67
5	3	33.9515	-16.8701	123.6691		
	1	33.9515	-16.8701	-61.9020	-0.0335	3.67
1	2	-39.6359	-19.6522	72.0059		
	3	-39.6359	-19.6522	-144.1682	0.0335	7.33
2	2	-26.6523	-13.2153	48.4211		
	3	-26.6523	-13.2153	-96.9475	0.0225	7.33
3	2	-26.6338	-13.1951	48.3467		
	3	-26.6338	-13.1951	-96.7993	0.0225	7.33
4	2	-18.9099	-9.3795	34.3669		
	3	-18.9099	-9.3795	-68.8081	0.0160	7.33
5	2	-39.6100	-19.6239	71.9017		
	3	-39.6100	-19.6239	-143.9608	0.0334	7.33

E L E M E N T R E P O R T S
SIGN CONVENTION : SEAM DESIGNERS

ELEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
3	1	3	-2.7581	73.6095	-268.0136		
		4	-2.7581	68.3017	-209.1205	0.0004	0.41
	2	3	-1.8547	49.4771	-180.2285		
		4	-1.8547	45.9281	-140.6271	0.0002	0.41
	3	3	-1.8516	49.4628	-179.9544		
		4	-1.8516	45.8938	-140.3815	0.0002	0.41
	4	3	-1.3165	35.1184	-127.9162		
		4	-1.3165	32.5869	-99.8185	0.0002	0.41
	5	3	-2.7538	73.5615	-267.6299		
		4	-2.7538	68.2537	-208.7766	0.0004	0.41
4	1	4	-2.7581	68.3017	-209.1205		
		5	-2.7581	42.7217	12.9262	0.0039	1.62
	2	4	-1.8547	45.9281	-140.6271		
		5	-1.8547	28.7281	8.6852	0.0026	1.62
	3	4	-1.8516	45.8938	-140.3815		
		5	-1.8516	28.6938	8.7936	0.0026	1.61
	4	4	-1.3165	32.5869	-99.8185		
		5	-1.3165	20.3869	6.1289	0.0019	1.62
	5	4	-2.7538	68.2537	-208.7766		
		5	-2.7538	42.6737	13.0780	0.0039	1.61
5	1	5	-2.7581	42.7217	12.9262	155.6268	6.66
		6	-2.7581	-59.5983	-122.0870	-0.1616	7.41
	2	5	-1.8547	28.7281	8.6852	104.6506	6.68
		6	-1.8547	-40.0719	-82.0655	-0.1087	7.41
	3	5	-1.8516	28.6938	8.7936	104.5300	6.67
		6	-1.8516	-40.1062	-82.5059	-0.1085	7.40
	4	5	-1.3165	20.3869	6.1289	74.2640	6.65
		6	-1.3165	-28.4131	-58.0813	-0.0771	7.41
	5	5	-2.7538	42.6737	13.0780	155.4581	6.67
		6	-2.7538	-59.6463	-122.7035	-0.1613	7.40

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LEM NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	1	6	-2.7581	-59.5983	-122.0870		
		7	-2.7581	-80.9576	-356.8155	0.0070	1.81
	2	6	-1.8547	-40.0719	-82.0655		
		7	-1.8547	-54.4339	-239.8903	0.0047	1.81
	3	6	-1.8516	-40.1062	-82.5059		
		7	-1.8516	-54.4682	-240.4452	0.0047	1.81
	4	6	-1.3165	-28.4131	-58.0813		
		7	-1.3165	-38.6001	-169.9934	0.0033	1.81
	5	6	-2.7538	-59.6463	-122.7035		
		7	-2.7538	-81.0056	-357.5923	0.0070	1.81
	1	7	-2.7581	-80.9576	-356.8155		
		8	-2.7581	-86.2655	-426.2131	0.0006	0.42
	2	7	-1.8547	-54.4339	-239.8903		
		8	-1.8547	-58.0029	-286.5516	0.0004	0.42
	3	7	-1.8516	-54.4682	-240.4452		
		8	-1.8516	-58.0372	-287.1349	0.0004	0.42
	4	7	-1.3165	-38.6001	-169.9934		
		8	-1.3165	-41.1316	-203.0821	0.0003	0.42
	5	7	-2.7538	-81.0056	-357.5923		
		8	-2.7538	-86.3135	-427.0298	0.0006	0.42
	1	8	75.2403	2.6856	-19.7203		
		9	75.2403	2.6856	9.8209	0.0033	3.67
	2	8	50.5800	1.8151	-13.3285		
		9	50.5800	1.8151	6.6379	0.0022	3.67
	3	8	50.7785	1.6556	-12.1590		
		9	50.7785	1.6556	6.0526	0.0020	3.67
	4	8	35.8188	1.3338	-9.7939		
		9	35.8188	1.3338	4.9784	0.0016	3.67
	5	8	75.5182	2.4622	-18.0830		
		9	75.5182	2.4622	9.0016	0.0030	3.67

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
1	10		-91.0408	3.9737	-14.6036		
	8		-91.0408	3.9737	29.1023	-0.0033	7.34
2	10		-61.2018	2.6856	-9.8729		
	8		-61.2018	2.6856	19.6686	-0.0022	7.34
3	10		-61.4419	2.4526	-9.0190		
	8		-61.4419	2.4826	17.9594	-0.0020	7.34
4	10		-43.3407	1.9726	-7.2511		
	8		-43.3407	1.9726	14.4479	-0.0016	7.34
5	10		-91.3770	3.6475	-13.4132		
	8		-91.3770	3.6475	26.7095	-0.0030	7.34
1	8		-1.4699	80.0156	-377.3904		
	11		-1.4699	74.7077	-313.1803	0.0005	0.41
2	8		-0.9843	53.7788	-253.5544		
	11		-0.9843	50.2098	-210.3992	0.0004	0.41
3	8		-1.0546	54.1832	-257.0165		
	11		-1.0546	50.6142	-213.5256	0.0004	0.41
4	8		-0.6777	38.0279	-178.8403		
	11		-0.6777	35.4964	-148.3278	0.0003	0.41
5	8		-1.5685	80.5817	-382.2373		
	11		-1.5685	75.2738	-317.5573	0.0004	0.41
1	11		-1.4699	74.7077	-313.1803		
	12		-1.4699	53.3484	-99.3264	0.0060	1.52
2	11		-0.9843	50.2098	-210.3992		
	12		-0.9843	35.8478	-66.6830	0.0040	1.52
3	11		-1.0546	50.6142	-213.3256		
	12		-1.0546	36.2522	-68.4589	0.0041	1.52
4	11		-0.6777	35.4964	-148.3278		
	12		-0.6777	25.3094	-46.7822	0.0028	1.52
5	11		-1.5685	75.2738	-317.5573		
	12		-1.5685	53.9145	-101.8127	0.0061	1.52

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LE NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
12	1	12	-1.4699	53.3484	-99.3264	123.1956	8.34
		13	-1.4699	-53.2562	-93.5576	-0.1294	8.34
	2	12	-0.9843	35.8478	-66.6830	82.7431	8.34
		13	-0.9843	-35.8332	-66.5613	-0.0869	8.34
	3	12	-1.0546	36.2522	-68.4589	84.3573	8.43
		13	-1.0546	-35.4288	-61.5966	-0.0893	8.39
	4	12	-0.6777	25.3094	-46.7822	58.2285	8.30
		13	-0.6777	-25.5341	-48.6553	-0.0609	8.31
	5	12	-1.5685	53.9143	-101.8127	125.4569	8.43
		13	-1.5685	-52.6901	-91.6070	-0.1328	8.39
	1	13	-1.4699	-53.2562	-98.5576		
		14	-1.4699	-74.5516	-311.3576	0.0010	1.81
	2	13	-0.9843	-35.8332	-66.5613		
		14	-0.9843	-50.1522	-209.7270	0.0040	1.81
	3	13	-1.0546	-35.4288	-61.5966		
		14	-1.0546	-49.7478	-203.4157	0.0038	1.82
	4	13	-0.6777	-25.5341	-48.6553		
		14	-0.6777	-35.6906	-150.5945	0.0029	1.81
	5	13	-1.5685	-52.6901	-91.6070		
		14	-1.5685	-73.9855	-302.5218	0.0057	1.82
	1	14	-1.4699	-74.5516	-311.3576		
		15	-1.4699	-79.8594	-375.4381	0.0005	0.42
	2	14	-0.9843	-50.1522	-209.7270		
		15	-0.9843	-53.7212	-252.8345	0.0004	0.42
	3	14	-1.0546	-49.7478	-203.4157		
		15	-1.0546	-53.3168	-246.1876	0.0004	0.42
	4	14	-0.6777	-35.6906	-150.5945		
		15	-0.6777	-38.2221	-181.2683	0.0003	0.42
	5	14	-1.5685	-73.9855	-302.5218		
		15	-1.5685	-79.2933	-366.1325	0.0005	0.42

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LIN NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
13	1	15	77.5548	-2.4450	17.9292		
		16	77.5548	-2.4450	-8.9664	-0.0030	3.67
	2	15	52.3906	-1.7465	12.8065		
		16	52.3906	-1.7465	-6.4045	-0.0021	3.67
	3	15	48.2505	0.0000	-0.0000		
		16	48.2505	0.0000	0.0000		
	4	15	38.3643	-1.7465	12.8065		
		16	38.3643	-1.7465	-6.4045	-0.0021	3.67
	5	15	71.7586	0.0000	-0.0000		
		16	71.7586	0.0000	0.0000		
	1	17	-93.8413	-3.5779	13.1173		
		15	-93.8413	-3.5779	-26.2399	0.0030	7.33
	2	17	-63.3927	-2.5557	9.3695		
		15	-63.3927	-2.5557	-18.7428	0.0021	7.33
	3	17	-58.3832	0.0000	-0.0000		
		15	-58.3832	0.0000	0.0000		
	4	17	-46.4206	-2.5557	9.3695		
		15	-46.4206	-2.5557	-18.7428	0.0021	7.33
	5	17	-86.8280	0.0000	-0.0000		
		15	-86.8280	0.0000	0.0000		
	1	15	-2.6028	91.5367	-419.6071		
		18	-2.6028	86.2289	-345.8344	0.0006	0.41
	2	15	-1.7935	62.0621	-284.3838		
		18	-1.7935	58.4931	-234.3534	0.0004	0.41
	3	15	-1.0546	53.3168	-246.1876		
		18	-1.0546	49.7478	-203.4157	0.0004	0.41
	4	15	-1.4869	46.5630	-212.8176		
		18	-1.4869	44.0315	-175.2209	0.0003	0.41
	5	15	-1.5685	79.2933	-366.1325		
		18	-1.5685	73.9855	-302.5218	0.0005	0.41

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
13	1	18	-2.6028	86.2259	-345.8344		
		19	-2.6028	60.4185	-105.7978	0.0065	1.52
	2	18	-1.7935	58.4931	-234.3534		
		19	-1.7935	40.9491	-71.7329	0.0044	1.52
	3	18	-1.0546	49.7478	-203.4157		
		19	-1.0546	35.4288	-61.5966	0.0038	1.51
	4	18	-1.4869	44.0315	-175.2209		
		19	-1.4869	30.6500	-53.8269	0.0033	1.52
	5	18	-1.5685	73.7855	-302.5218		
		19	-1.5685	52.6901	-91.6070	0.0057	1.51
	1	19	-2.6028	60.4185	-105.7978	152.7163	8.25
		20	-2.6028	-62.3986	-116.6904	-0.1627	8.29
	2	19	-1.7935	40.9491	-71.7329	103.8297	8.25
		20	-1.7935	-42.3122	-79.0858	-0.1107	8.29
	3	19	-1.0546	35.4288	-61.5966	84.3573	8.24
		20	-1.0546	-36.2522	-68.4589	-0.0893	8.28
	4	19	-1.4869	30.6500	-53.8269	79.3074	8.25
		20	-1.4869	-31.7737	-59.1850	-0.0847	8.30
	5	19	-1.5685	52.6901	-91.6070	125.4569	8.24
		20	-1.5685	-53.9145	-101.8127	-0.1328	8.28
	1	20	-2.6028	-62.3986	-116.6904		
		21	-2.6028	-84.8110	-361.5638	0.0070	1.81
	2	20	-1.7935	-42.3122	-79.0858		
		21	-1.7935	-57.4264	-244.9589	0.0047	1.81
	3	20	-1.0546	-36.2522	-68.4589		
		21	-1.0546	-50.6142	-213.5256	0.0041	1.82
	4	20	-1.4869	-31.7737	-59.1850		
		21	-1.4869	-42.7130	-182.8875	0.0036	1.81
	5	20	-1.5685	-53.9145	-101.8127		
		21	-1.5685	-75.2738	-317.5573	0.0061	1.82

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

LOAD NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
	1	21	-2.6028	-84.8110	-361.5638		
		22	-2.6028	-90.1189	-434.1597	0.0006	0.42
	2	21	-1.7935	-57.4264	-244.9589		
		22	-1.7935	-60.9954	-294.1039	0.0004	0.42
	3	21	-1.0546	-50.6142	-213.5256		
		22	-1.0546	-54.1832	-257.0165	0.0004	0.42
	4	21	-1.4869	-42.7130	-182.8875		
		22	-1.4869	-45.2445	-219.3998	0.0003	0.42
	5	21	-1.5685	-75.2738	-317.5573		
		22	-1.5688	-80.5817	-382.2373	0.0006	0.42
	1	22	80.0652	-0.0610	0.4904		
		23	80.0652	-0.0610	-0.1807		
	2	22	54.0263	0.0596	-0.4071		
		23	54.0263	0.0596	0.2480		
	3	22	50.7785	-1.6556	12.1590		
		23	50.7785	-1.6556	-6.0526	-0.0020	3.67
	4	22	39.2652	0.5408	-3.9417		
		23	39.2652	0.5408	2.0074	0.0006	3.64
	5	22	75.5182	-2.4622	18.0830		
		23	75.5182	-2.4622	-9.0016	-0.0030	3.67
	1	24	-96.8789	-0.1580	0.6424		
		22	-96.8789	-0.1580	-1.0958	0.0001	7.33
	2	24	-65.3719	0.0399	-0.1030		
		22	-65.3719	0.0399	0.3360		
	3	24	-61.4419	-2.4526	9.0190		
		22	-61.4419	-2.4526	-17.9594	0.0020	7.34
	4	24	-47.5108	0.7529	-2.7248		
		22	-47.5108	0.7529	5.5568	-0.0006	7.31
	5	24	-91.3770	-3.6475	13.4132		
		22	-91.3770	-3.6475	-26.7095	0.0030	7.34

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
1	22	-2.6998	86.8253	-435.7460		
	25	-2.6998	81.5174	-365.8837	0.0006	0.41
2	22	-1.8131	58.4028	-293.3608		
	25	-1.8131	54.8338	-246.3676	0.0004	0.41
3	22	-1.8516	58.0372	-287.1349		
	25	-1.8516	54.4682	-240.4452	0.0004	0.41
4	22	-1.2748	41.5315	-209.8913		
	25	-1.2748	39.0000	-176.4708	0.0003	0.41
5	22	-2.7538	86.3135	-427.0298		
	25	-2.7538	81.0056	-357.5923	0.0006	0.41
1	25	-2.6998	81.5174	-365.8837		
	26	-2.6998	60.1581	-129.2853	0.0073	1.53
2	25	-1.8131	54.8338	-246.3676		
	26	-1.8131	40.4718	-87.2073	0.0049	1.53
3	25	-1.8516	54.4682	-240.4452		
	26	-1.8516	40.1062	-82.5059	0.0047	1.53
4	25	-1.2748	39.0000	-176.4708		
	26	-1.2748	28.8130	-63.2230	0.0035	1.54
5	25	-2.7538	81.0056	-357.5923		
	26	-2.7538	59.6463	-122.7035	0.0070	1.53
1	26	-2.6998	60.1581	-129.2853	153.6701	9.41
	27	-2.6998	-42.1619	14.6847	-0.1560	8.64
2	26	-1.8131	40.4718	-87.2073	103.2538	9.41
	27	-1.8131	-28.3282	9.9413	-0.1061	8.64
3	26	-1.8516	40.1062	-82.5059	104.5300	9.33
	27	-1.8516	-28.6938	8.7936	-0.1065	8.60
4	26	-1.2748	28.8130	-63.2230	72.8736	9.48
	27	-1.2748	-19.9870	7.3850	-0.0746	8.66
5	26	-2.7538	59.6463	-122.7035	155.4581	9.33
	27	-2.7538	-42.6737	13.0760	-0.1613	8.60

E L E M E N T R E P O R T S
SIGN CONVENTION : BEAM DESIGNERS

LINE NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
27	1	27	-2.6998	-42.1619	14.6847		
		28	-2.6998	-67.7419	-205.1227	0.0038	2.39
	2	27	-1.8131	-26.3282	9.9413		
		28	-1.8131	-45.5282	-137.7715	0.0026	2.39
	3	27	-1.8516	-28.6938	8.7936		
		28	-1.8516	-45.8938	-140.3815	0.0026	2.37
	4	27	-1.2748	-19.9670	7.3850		
		28	-1.2748	-32.1870	-96.9629	0.0018	2.40
	5	27	-2.7538	-42.6737	13.0780		
		28	-2.7538	-68.2537	-208.7766	0.0039	2.39
[illegible]	1	28	-2.6998	-67.7419	-205.1227		
		29	-2.6998	-73.0497	-263.5512	0.0004	0.42
	2	28	-1.8131	-45.5282	-137.7715		
		29	-1.8131	-49.0972	-177.0411	0.0002	0.42
	3	28	-1.8516	-45.8938	-140.3815		
		29	-1.8516	-49.4628	-179.9544	0.0002	0.42
	4	28	-1.2748	-32.1870	-96.9629		
		29	-1.2748	-34.7185	-124.7287	0.0002	0.42
	5	28	-2.7538	-68.2537	-208.7766		
		29	-2.7538	-73.5615	-267.6299	0.0004	0.42
[illegible]	1	29	33.7153	16.6189	-121.8173		
		30	33.7153	16.6189	60.9903	0.0330	3.67
	2	29	22.6603	11.1640	-81.8324		
		30	22.6603	11.1640	40.9717	0.0221	3.67
	3	29	22.8290	11.3435	-83.1352		
		30	22.8290	11.3435	41.6229	0.0225	3.67
	4	29	16.0239	7.8665	-57.6394		
		30	16.0239	7.8665	28.8720	0.0156	3.66
	5	29	33.9515	16.8701	-123.6691		
		30	33.9515	16.8701	61.9020	0.0335	3.67

E L E M E N T R E P O R T S

SIGN CONVENTION : BEAM DESIGNERS

EL NO	LOAD COMB	NODE NO	AXIAL	SHEAR	MOMENT	MAX MOM/DEFL	DIST
30	1	31	-39.3345	19.3187	-70.7716		
		29	-39.3345	19.3187	141.7339	-0.0329	7.33
	2	31	-26.4370	12.9771	-47.5395		
		29	-26.4370	12.9771	98.2057	-0.0221	7.33
	3	31	-26.6338	13.1951	-48.3467		
		29	-26.6338	13.1951	96.7993	-0.0225	7.33
	4	31	-18.6946	9.1413	-33.4853		
		29	-18.6946	9.1413	67.0693	-0.0156	7.33
	5	31	-39.6100	19.6239	-71.9017		
		29	-39.6100	19.6239	143.9608	-0.0334	7.33

R E A C T I O N S

NODE NO	LOAD COMB	FX	FY	MOMENT
	Units :	K	K	K -Ft

A COMBINATIONS:

MB 1 : 1.40 X CASE 1
+ 1.70 X CASE 2
+ 1.40 X CASE 3

MB 2 : 1.00 X CASE 1
+ 1.00 X CASE 2
+ 1.00 X CASE 3

M 3 : 1.00 X CASE 1
+ 1.00 X CASE 2

MB 4 : 1.00 X CASE 1
+ 1.00 X CASE 3

MB 5 : 1.40 X CASE 1
+ 1.70 X CASE 2

1	1	-16.8941	33.9736	-61.9898
	2	-11.3606	22.8448	-41.6856
	3	-11.3435	22.8290	-41.6229
	4	-8.0631	16.2085	-29.5859
	5	-16.8701	33.9515	-61.9020

R E A C T I O N S

JOINT NO	LOAD COMB	PX	PY	MOMENT
2	1	19.6522	39.6389	-72.0059
	2	13.2153	26.6523	-48.4211
	3	13.1951	26.6338	-48.3467
	4	9.3795	18.9099	-34.3667
	5	19.6239	39.6100	-71.9017
9	1	2.6856	75.2403	9.8209
	2	1.8151	50.5800	6.6379
	3	1.6556	50.7785	6.0526
	4	1.3338	35.8188	4.8784
	5	2.4622	75.5182	9.0016
10	1	-3.9737	91.0408	14.6086
	2	-2.6856	61.2018	9.8729
	3	-2.4526	61.4419	9.0190
	4	-1.7726	43.3407	7.2511
	5	-3.6475	91.3770	13.4132
16	1	-2.4450	77.5548	-8.9664
	2	-1.7465	52.3906	-6.4045
	3	0.0000	48.2505	0.0000
	4	-1.7465	38.3643	-6.4045
	5	0.0000	71.7586	0.0000
17	1	3.5779	93.8413	-13.1173
	2	2.5557	63.3927	-9.3695
	3	-0.0000	58.3832	0.0000
	4	2.5557	46.4208	-9.3695
	5	-0.0000	86.8280	0.0000
23	1	-0.0610	80.0652	-0.1807
	2	0.0596	54.0263	0.2480
	3	-1.6556	50.7785	-6.0526
	4	0.5408	39.2652	2.0074
	5	-2.4622	75.5182	-9.0016
24	1	0.1580	96.8789	-0.6424
	2	-0.0399	65.3719	0.1030
	3	2.4526	61.4419	-9.0190
	4	-0.7529	47.5108	2.7248
	5	3.6475	91.3770	-13.4132

R E A C T I O N S

JOINT NO	LOAD COMB	PX	PY	MOMENT
30	1	16.6189	33.7153	60.9903
	2	11.1640	22.6603	40.9717
	3	11.3435	22.8290	41.6229
	4	7.8665	16.0239	28.8720
	5	16.8701	33.9515	61.9020
31	1	-19.3187	39.3343	70.7716
	2	-12.9771	26.4370	47.5395
	3	-13.1951	26.6338	48.3467
	4	-9.1413	18.6946	33.4853
	5	-19.6239	39.6100	71.9017

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Project GSA Map Room
Subject Room 5031
Project No. 9062.004 Date 2/21/92 By JMW

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SLAB BEAM "D"

MAX. NEG. MOMENT @ DROPPED PANEL = -420 1-k
" " " @ 8" SECTION = -117 1-k
" POS. " @ " " = 1-k

@ DROPPED PANEL $M_u = -420$ 1-k M_u (DEAD & LIVE) = -366

$d = 10.31$"
$b = 100$ IN

TOP BARS 26 #5 > $A_s = 12.4$ IN^2
14 #5

$$a = \frac{12.4(40)}{.85(3)(100)} = 1.945 \text{ IN}$$

$$\phi M_n = \frac{1}{12}(.9)\left[(12.4)(40)\left(10.31 - \left(\frac{1.945}{2}\right)\right)\right]$$

$\phi M_n = 347$ 1-k < 420 1-k X N.G.

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8" SECTION - NEG.

$M_u = -117^{1-k}$ $M_{u\,(DEAD\ \&\ LIVE)} = 102^{1-k}$

$d = 6.31"$
$b = 300_{IN}$

TOP BARS: $\begin{matrix}26\ \#5\\14\ \#5\end{matrix} > A_s = 12.4_{IN^2}$

$$a = \frac{12.4(40)}{.85(3)(300)} = 0.648_{IN}$$

$$\phi M_n = \frac{1}{12}(.9)\left[(12.4)(40)\left(6.31 - \left(\frac{.648}{2}\right)\right)\right]$$

$\phi M_n = 223^{1-k} > 117^{1-k}$ ✓ OK

8" SECTION - POS. $M_u = 153^{1-k}$ $M_{u\,(DEAD\ \&\ LIVE)} = 125^{1-k}$

$d = 6.06"$ BOTTOM BARS: $\begin{matrix}22\ \#5\\16\ \#5\end{matrix} > A_s = 11.78_{IN^2}$

$$a = \frac{11.78(40)}{.85(3)(300)} = 0.616"$$

$$\phi M_n = .9\left(\frac{1}{12}\right)\left[(11.78)(40)\left(6.06 - \left(\frac{.616}{2}\right)\right)\right]$$

$\phi M_n = 203^{1-k} > 153^{1-k}$ ✓ OK

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Project GSA MAP ROOM
Subject FLOOR LOAD ANALYSIS
Project No. 91062.004 Date 2/21/92 By JMW

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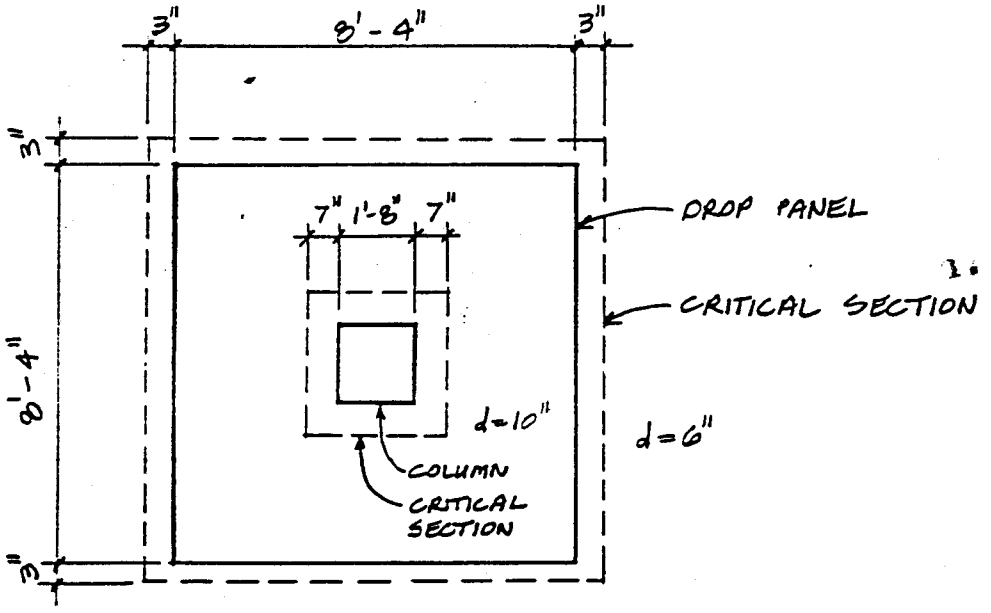
CHECK SHEAR - 6th FLOOR



TRIBUTARY AREA: 25' x 25'

CHECK 8" SECTION:

$$b_o = 4(106) = 424_{IN}$$

$$\beta_o = \frac{424}{6} = 71$$

$$V_{c_1} = \left(\frac{\alpha_s d}{b_o} + 2\right)\sqrt{3000}\,(424)(6)\left(\frac{1}{1000}\right)$$

$$V_c = 357.6^k$$

$$\phi V_n = .85\,(357.6) = \underline{304^k}$$

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CHECK @ DROPPED PANEL

$b_o = 4(34) = 136"$

$\beta_o = \frac{136}{10} = 13.6$

$V_c = 4\sqrt{3000}(136)(10.31)\left(\frac{1}{1000}\right) = 307^k < 357^k$

$\phi V_n = .85(307) = 261^k$

FIND RESERVE CAPACITY

DL = 122 psf (1.4) = 171 psf
LL = 50 psf (1.7) = 85 psf
256 psf

AREA $= (25)^2 - (2.25)^2 = 620$ SF

$V_u = 620(.256) = 159^k$

$\therefore$ RESERVE CAPACITY $= \frac{261-159}{1.7} = 60^k$

OR 97 psf
MINUS PRESENT LOADS

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CHECK WIDE BEAM SHEAR

CRIT. SECTION: 6" FROM DROP PANEL, 25' LONG

TRIB AREA = $25(12.5' - 4.67')' = 195.75'$

$$\phi V_n = \phi V_c = .85(2)\sqrt{3000}(6)(300)$$

$$\phi V_n = 167.6^k$$

$$V_u = .256(195.75) = 50.11^k$$

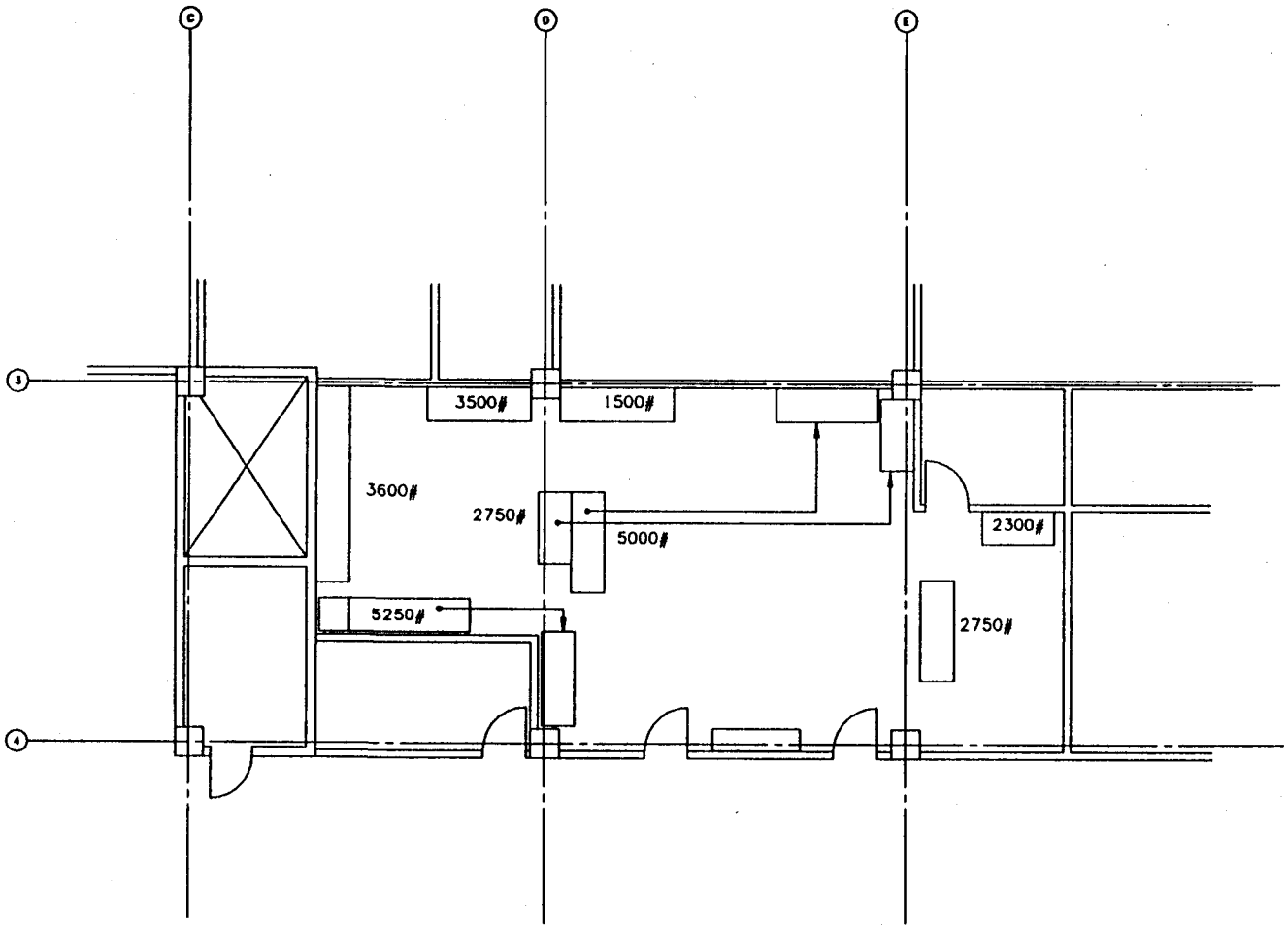
RESERVE CAPACITY:

$$\frac{167.6 - 50.11}{1.7} = 69.11^k \text{ OR } 353 \text{ psf}$$

MINUS PRESENT LOADS

Copies to:

APPENDIX C



FLOOR PLAN – ROOM 5031
SCALE: 1/4"= 1'-0"

m-5031 02-22-92

BPLW
Architects & Engineers, Inc.

Designing to Shape the Future

REV.	DESCRIPTION	DATE

ENGINEER | ARCHITECT

GSA MAP ROOM
FEDERAL BUILDING

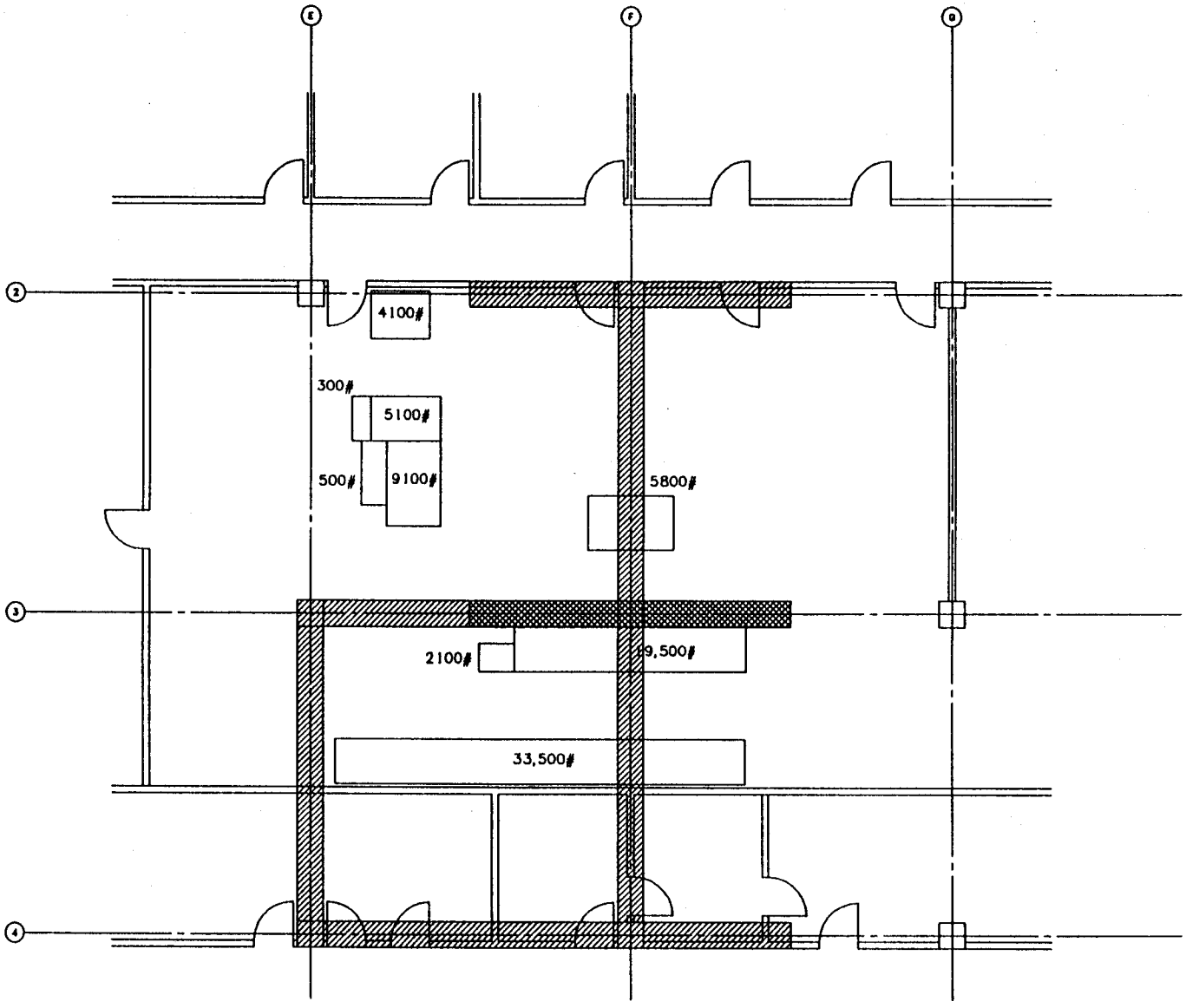
517 GOLD AVE. SW
ALBUQUERQUE, NEW MEXICO

PROJECT NO. 91062.004 | DATE

FLOOR PLAN – ROOM 5031

DRAWING NO.

SHEET OF



FLOOR PLAN – ROOM 6433
SCALE: 1/4"= 1'-0"

Area of apparent damage to slab.

Areas of possible damage due to moment redistribution.

BPLW
Architects & Engineers, Inc.

Designing To Shape The Future

REV.	DESCRIPTION	DATE

ENGINEER | ARCHITECT

GSA MAP ROOM
FEDERAL BUILDING

517 Gold Ave. SW
Albuquerque, New Mexico

PROJECT NO. 91062.004 | DATE

FLOOR PLAN – ROOM 6433

DRAWING NO.

SHEET OF

RM6433 07-23-92

BPLW

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March 4, 1992

Mr. Hector Gonzalez
General Services Administration
PBS, Region 7
Design and Construction Division (7PCPT)
819 Taylor Street
Fort Worth, Texas 76102-6105

Re: Floor Load Analysis
Room 6433, Federal Building
517 Gold Avenue
Albuquerque, NM

Dear Mr. Gonzalez:

As per your request, I am sending a new layout for the map files in room 6433. This layout will reduce the moment induced into the two-way slab system. It is meant to be only a temporary solution to the overstressed condition of the slab until a thorough investigation of the condition of the slab can be performed.

The new layout shows locations for the "stacks" of map files. "Stack" refers to the current configuration of the map file cabinets. They are currently placed one on top of another to create a stack of up to 4 cabinets high. Entire stacks should be moved to the locations shown.

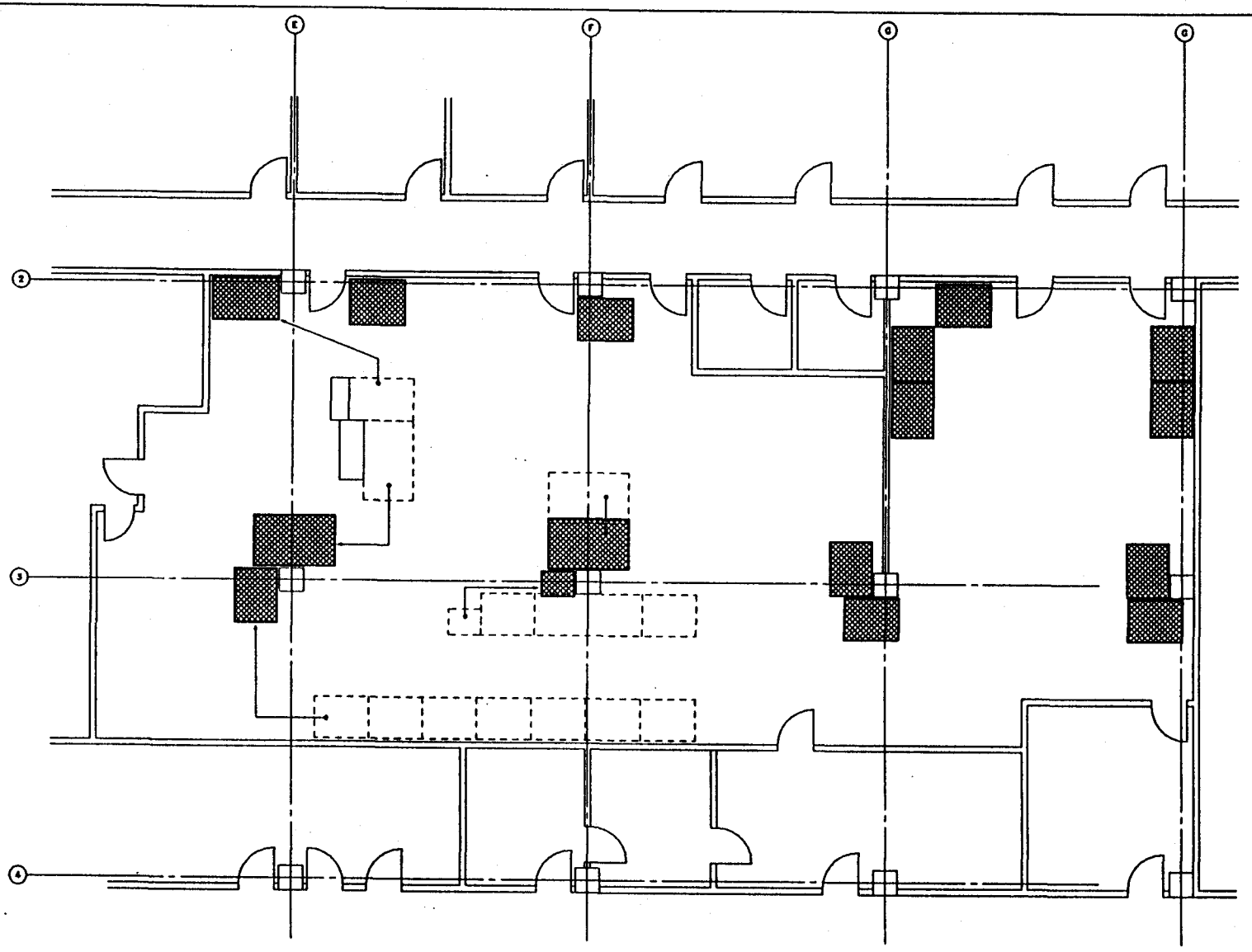
I hope this will fulfill your current needs. If you have any questions, or if we can be of further assistance, please contact our office.

Sincerely,

BPLW ARCHITECTS & ENGINEERS, INC.

Jason M Weaver

Jason Weaver, EI
Structural Engineer



FLOOR PLAN – ROOM 6433
SCALE: 1/4"= 1'-0"

BM6433 02-25-92

BPLW
Architects & Engineers, Inc.

Designing to Shape the Future

EXISTING STACK LOCATION

NEW STACK LOCATION

REV.	DESCRIPTION	DATE

ENGINEER ARCHITECT

GSA MAP ROOM
FEDERAL BUILDING

517 Gold Ave. SW
Albuquerque, New Mexico

PROJECT NO. 91082.004 | DATE 3/92

FLOOR PLAN – ROOM 6433

DRAWING NO.

SHEET OF